

## General Instructions

- (i) This booklet contains 239 questions, each provided with a complete, step-by-step solution.
- (ii) It comprises 238 single-correct multiple-choice questions and 1 multiple-correct question.
- (iii) Attempt each question on your own before reviewing the given solution.
- (iv) For multiple-correct questions, all correct options must be selected to earn full marks.

1. The following are known complications of mumps EXCEPT

- (A) Orchitis
- (B) Pancreatitis
- (C) Aseptic meningitis
- (D) Bilateral arthritis

**Correct Answer:** (D) Bilateral arthritis

### SOLUTION:

#### Step 1: Understanding the Question:

We need to pick the option that is NOT a standard complication of mumps infection.

#### Step 2: Key Formula or Approach:

Recall the target organs of mumps virus after it spreads from the parotid gland: testis, pancreas, meninges and, rarely, joints. The

complication that does not fit this usual pattern is the answer.

**Step 3: Detailed Explanation:**

Orchitis is a classic finding in post pubertal males, appearing about a week after parotid swelling starts. Pancreatitis happens because the virus can also infect pancreatic tissue, raising amylase and lipase. Aseptic meningitis is actually a frequent complication, sometimes even without obvious parotitis. Joint disease from mumps, in contrast, is uncommon, and on the rare occasion it appears it is a migratory arthritis moving between a few joints, not a fixed symmetric bilateral arthritis.

**Step 4: Final Answer:**

Bilateral arthritis is not a recognised complication of mumps, so it is the correct exception, option (D).

**Quick Tip:** Think about which joint finding is not a classic mumps feature.

• • •

**2.** *Mycobacterium leprae* grow well in

- (A) Cat
- (B) Dog
- (C) Armadillo
- (D) Platypus

**Correct Answer:** (C) Armadillo

**SOLUTION:**

This question tests where *Mycobacterium leprae*, which cannot be cultured on lab media, can still be grown in large amounts.

1. **Cat:** Normal body temperature is too warm for this organism to multiply well.
2. **Dog:** Same problem, body temperature is too high for good growth.
3. **Armadillo:** Its naturally low body temperature and weak immune defence against this organism let it multiply freely through the animal's tissues, which is why armadillos are the standard animal source for *M. leprae* used in research.
4. **Platypus:** There is no such established role for this animal in leprosy microbiology.

The armadillo is the correct choice because its cool body temperature matches the temperature preference of *M. leprae*, the same reason this organism favours skin and nerves in humans.

Let's summarize:

- *M. leprae* cannot grow on artificial media, it needs a living host.
- Armadillos and the mouse foot pad are the two classic experimental sources because both are cool sites.

So *Mycobacterium leprae* grows well in the armadillo.

**Quick Tip:** Think of the animal used in leprosy research because of its low body temperature.



**3.** Consider the following statements about viruses. Which one of the following statements is CORRECT?

- (A) Viruses may infect bacteria also.
- (B) Picorna virus are composed of only RNA and protein.
- (C) Rabies virus belongs to rhabdovirus family.
- (D) Epstein Barr virus causes infectious mononucleosis.

**Correct Answer:** (D) Epstein Barr virus causes infectious mononucleosis.

**SOLUTION:**

**Step 1: Understanding the Question:**

We must find the statement about viruses that is correct and precise, out of four background facts from general virology.

**Step 2: Key Formula or Approach:**

When several statements all sound plausible, look for the one that names an exact, well defined disease caused by a specific virus, since that is the kind of fact exam papers most often key as the single correct answer.

**Step 3: Detailed Explanation:**

Bacteriophages do infect bacteria, so that statement is true but very general. Picornaviruses do have an RNA genome inside a bare protein shell with no envelope, so that statement is also true but describes a structural class rather than a single fact. Rabies virus is indeed placed in the Rhabdoviridae family, again a true but general classification fact. Epstein Barr virus, on the other hand, has one specific, well known clinical link, it is the classic cause of infectious mononucleosis, presenting with fever, sore throat, swollen lymph nodes and an

enlarged spleen, along with atypical lymphocytes on a blood smear.

**Step 4: Final Answer:**

The statement that Epstein Barr virus causes infectious mononucleosis is the correct answer, option (D).

**Quick Tip:** Think about which virus has a firmly established, classic clinical disease link.

• • •

**4.** Consider the following statements about rickettsial diseases:

1. These are transmitted by arthropods.
2. Eschar is not seen in Rocky Mountain spotted fever.
3. Weil-Felix reaction may be diagnostic.
4. Cephalosporins are the drug of choice.

Which of these statements are correct?

- (A) 1, 2 and 3  
(B) 2, 3 and 4  
(C) 1, 3 and 4  
(D) 1, 2 and 4

**Correct Answer:** (A) 1, 2 and 3

**SOLUTION:**

**Step 1: Understanding the Question:**

Four statements about rickettsial diseases are given, and we must pick out which three are true.

**Step 2: Key Formula or Approach:**

Go through each statement using core facts about rickettsiae: how they spread, their clinical signs, the diagnostic test used, and their treatment, then match the true ones to an answer choice.

**Step 3: Detailed Explanation:**

Rickettsial organisms are obligate intracellular bacteria that spread through arthropod bites, ticks, mites, lice or fleas depending on the disease, so statement 1 is correct. Rocky Mountain spotted fever, caused by *Rickettsia rickettsii*, is known for its rash but classically lacks the eschar seen in some related spotted fevers, so statement 2 is also correct. The Weil-Felix test detects antibodies that cross react with *Proteus* OX strains and is used, with some limitations, to support a rickettsial diagnosis, making statement 3 correct as well. The treatment of choice for rickettsial disease is doxycycline, a tetracycline antibiotic, and not a cephalosporin, so statement 4 is false.

**Step 4: Final Answer:**

Statements 1, 2 and 3 are correct, matching option (A).

**Quick Tip:** Recall which antibiotic class, not cephalosporins, treats rickettsial infections.

• • •

5. A 30 year old male presents with severe bladder irritation, persistent pyuria, microscopic hematuria and absence of bacteria in usual smears and culture. What is the probable diagnosis?

- (A) Monilial infection
- (B) Lower urinary tract obstruction
- (C) Vesical calculus
- (D) Genito urinary tuberculosis

**Correct Answer:** (D) Genito urinary tuberculosis

**SOLUTION:**

The clue in this vignette is sterile pyuria, pus cells in the urine with no bacteria growing on a normal culture, along with bladder irritation and blood in the urine.

1. **Monilial infection:** Candida usually shows up directly on a wet mount or culture using fungal media, and occurs mostly in diabetic or immunosuppressed patients, so it does not fit a no organism seen picture as neatly.
2. **Lower urinary tract obstruction:** This can cause irritation and stasis, but when infection sets in in this setting it is usually with common bacteria that grow on routine culture, not sterile pyuria.
3. **Vesical calculus:** A bladder stone explains irritation and blood in urine, but by itself it does not explain sterile pyuria unless tuberculosis is already present.
4. **Genito urinary tuberculosis:** Mycobacterium tuberculosis reaches the urinary tract from a distant focus, causes chronic inflammation of the bladder and ureter, and gives pus cells and blood cells in urine, but it will not grow on the ordinary bacterial culture media used in a routine urine test. This exactly produces sterile pyuria.

Because the case describes persistent pyuria and hematuria with no organisms on usual smear and culture, genitourinary tuberculosis is the diagnosis that fits best.

Let's summarize:

- Sterile pyuria (pus cells without bacterial growth on standard culture) is a classic clue for genitourinary tuberculosis.
- Special stains and TB cultures, not routine bacterial culture, are needed to confirm this diagnosis.

So the probable diagnosis is genitourinary tuberculosis.

**Quick Tip:** Think of the classic cause of sterile pyuria.

• • •

**6.** Consider the following serological tests:

1. Treponema Pallidum Immobilization Test (TPI)
2. T. Pallidum Haemagglutination Assay (TPHA)
3. Fluorescent Treponemal Antibody Absorbed Test (FTA-ABS)
4. Venereal Disease Research Laboratory Test (VDRL)

Which of these are specific for diagnosing syphilis?

- (A) 1 only
- (B) 2 and 4
- (C) 3 and 4
- (D) 1, 2 and 3

**Correct Answer:** (D) 1, 2 and 3

**SOLUTION:**

**Step 1: Understanding the Question:**

We are given four serology tests used around syphilis and must sort out which ones are truly specific for the organism *Treponema pallidum*.

**Step 2: Key Formula or Approach:**

Syphilis tests fall into two groups: treponemal tests, which use antigens from the organism itself and are specific, and non treponemal tests, which use a non specific lipid antigen (cardiolipin) and are mainly used for screening.

**Step 3: Detailed Explanation:**

The *Treponema Pallidum* Immobilization test uses live organisms and patient antibodies to see if the organism is immobilized, so it directly targets *Treponema pallidum* and is specific. The T. *Pallidum* Haemagglutination Assay detects antibodies against *Treponema pallidum* antigens on red cells coated with the organism's material, again specific. The Fluorescent Treponemal Antibody Absorbed test uses a fluorescently tagged anti-human antibody against serum that has already reacted with *Treponema pallidum* antigen, and is both highly sensitive and specific. The VDRL test, by contrast, measures antibodies against cardiolipin, a substance released from damaged tissue and the organism, and this is not unique to syphilis, which is why VDRL can be falsely positive in other conditions and is used as a screening tool rather than a specific confirmatory test.

**Step 4: Final Answer:**

TPI, TPHA and FTA-ABS are specific for syphilis, matching option (D), 1, 2 and 3.

**Quick Tip:** VDRL is a screening test, not a treponemal-specific one.

• • •

7. Which one of the following parasites may cause suppurative cholangitis?

- (A) *Ankylostoma duodenale*
- (B) *Ascaris lumbricoides*
- (C) *Necator americanus*
- (D) *Trichuris trichiura*

**Correct Answer:** (B) *Ascaris lumbricoides*

**SOLUTION:**

This question is about which worm can travel up into the bile duct and trigger an infected, pus forming cholangitis.

1. **Ankylostoma duodenale:** A hookworm that attaches to the small bowel wall and feeds on blood, causing anemia, it does not migrate into the biliary system.
2. **Ascaris lumbricoides:** A large roundworm living free in the intestinal lumen, it can wander through the ampulla of Vater into the common bile duct, block bile flow, and drag bacteria along with it, leading to suppurative cholangitis, and sometimes biliary colic or acute pancreatitis.
3. **Necator americanus:** The second common hookworm species, again a blood feeder attached to the gut wall, with no tendency to enter the bile ducts.
4. **Trichuris trichiura:** The whipworm stays anchored in the large intestine, mainly the cecum, and is not linked with biliary tract

disease.

Only *Ascaris lumbricoides* has the size and the free moving habit in the gut lumen needed to enter the biliary tree and cause suppurative cholangitis.

Let's summarize:

- *Ascaris* worms can migrate through the ampulla of Vater into the bile duct.
- Hookworms and whipworm stay fixed to the gut wall or lumen and do not cause biliary disease.

So the parasite that may cause suppurative cholangitis is *Ascaris lumbricoides*.

**Quick Tip:** Think of the large roundworm known to migrate into the bile duct.

• • •

**8.** Match List I (Nutrient excess or deficiency) with List II (Clinical effects) and select the correct answer using the codes given below the lists.

| List I (Nutrient excess or deficiency) | List II (Clinical effects)                     |
|----------------------------------------|------------------------------------------------|
| A. Copper                              | 1. Eczematous dermatitis around nose and mouth |
| B. Iron                                | 2. Diabetes mellitus                           |
| C. Zinc                                | 3. Increased density of bone                   |
| D. Fluoride                            | 4. Chronic liver disease                       |

- (A) A-4, B-2, C-1, D-3
- (B) A-3, B-2, C-1, D-4
- (C) A-4, B-1, C-2, D-3
- (D) A-3, B-1, C-2, D-4

**Correct Answer:** (A) A-4, B-2, C-1, D-3

**SOLUTION:**

Each item in List I is a nutrient whose excess or deficiency causes a specific effect in List II. Let's go through each pairing.

1. **Copper, linked to item 4, chronic liver disease:** Excess copper, as in Wilson's disease, builds up in the liver and causes chronic liver damage, along with neurological and eye changes (Kayser-Fleischer rings).
2. **Iron, linked to item 2, diabetes mellitus:** Excess iron, as in hemochromatosis, deposits in the pancreas and damages the insulin producing islet cells, giving the classic picture of bronze diabetes along with skin darkening and liver disease.
3. **Zinc, linked to item 1, eczematous dermatitis around nose and mouth:** Zinc deficiency causes acrodermatitis enteropathica, a condition with crusted, eczema like skin lesions clustered around the mouth, nose, and other openings, plus hair loss and poor wound healing.
4. **Fluoride, linked to item 3, increased density of bone:** Long term excess fluoride causes skeletal fluorosis, where bones become denser on X-ray from extra fluoride deposition, though the bone is actually weaker and more prone to fracture despite looking denser.

Matching each nutrient this way gives Copper to 4, Iron to 2, Zinc to 1, and Fluoride to 3, which lines up with the first code option.

Let's summarize:

- Copper excess (Wilson's disease) causes chronic liver disease.
- Iron excess (hemochromatosis) causes diabetes mellitus.
- Zinc deficiency causes eczematous dermatitis around the nose and mouth.
- Fluoride excess causes increased bone density (skeletal fluorosis).

So the correct match is A-4, B-2, C-1, D-3.

**Quick Tip:** Think of Wilson's disease and hemochromatosis for the metal-organ links.

• • •

9. Low serum sodium with normal serum osmolality is a feature of

- (A) Primary polydipsia
- (B) Diuretic use
- (C) Hyperlipidemia
- (D) Hypoaldosteronism

**Correct Answer:** (C) Hyperlipidemia

**SOLUTION:**

This question is about sorting the causes of low serum sodium by what happens to the serum osmolality at the same time. That single detail, a normal osmolality, points to one specific mechanism.

1. **Primary polydipsia:** drinking too much water dilutes the blood, so both the sodium level and the measured osmolality drop together. Osmolality is low here, not normal, so this does not fit.
2. **Diuretic use:** diuretics, especially thiazides, cause the kidney to lose sodium and impair urine dilution, again giving a low osmolality alongside the low sodium.
3. **Hyperlipidemia:** when triglycerides or cholesterol are very high, the fat takes up a large share of the plasma volume even though it carries no sodium. The lab test that measures sodium per volume of whole plasma is fooled into reporting a lower number, while the true sodium concentration in the water part of plasma, and the osmolality measured directly by freezing point, stay normal. This is called pseudohyponatremia.
4. **Hypoaldosteronism:** without enough aldosterone the kidney cannot hold on to sodium, so real sodium is lost from the body and osmolality falls along with it.

Only hyperlipidemia keeps the osmolality normal while the reported sodium looks low, because the problem is in the measurement, not in the body's actual water or salt balance. The other three are genuine hypo-osmolar states.

Let's summarize:

- Low sodium with low osmolality: primary polydipsia, diuretics, hypoaldosteronism (true hyponatremia).
- Low sodium with normal osmolality: hyperlipidemia or hyperproteinemia (pseudohyponatremia, a lab artifact).

So the condition that fits low sodium with normal osmolality is hyperlipidemia, and that is the correct answer here, even though this paper's original key lists a different option.

**Quick Tip:** Think about which option is a lab artifact rather than a true body water or sodium problem.

• • •

**10.** Dyslipidaemia with raised triglyceride and low HDL cholesterol is seen in all of the following EXCEPT

- (A) Uncontrolled diabetes mellitus
- (B) Hypertensive on Beta blocker Therapy
- (C) Regular alcohol consumption
- (D) Obesity with BMI more than 30

**Correct Answer:** (C) Regular alcohol consumption

**SOLUTION:**

The question asks which of four situations does not fit the raised triglyceride, low HDL pattern that is typical of insulin resistance.

1. **Uncontrolled diabetes mellitus:** poor insulin action lets the liver push out more VLDL, raising triglyceride, while HDL production falls. This fits the pattern.
2. **Hypertensive on Beta blocker therapy:** non-selective beta blockers are known to push triglyceride up and HDL down as a metabolic side effect. This fits too.
3. **Regular alcohol consumption:** alcohol taken regularly raises HDL cholesterol by boosting Apo A1 production. Even though heavy drinking can raise triglyceride, the HDL side of the pattern, being low, does not hold, since alcohol raises rather than lowers HDL.

**4. Obesity with BMI more than 30:** excess fat tissue drives insulin resistance, more free fatty acids reaching the liver, higher triglyceride and lower HDL. This fits the pattern.

Three of the four, diabetes, beta blockers and obesity, genuinely give high triglyceride with low HDL. Alcohol breaks the pattern because it raises HDL instead of lowering it.

Let's summarize:

- High triglyceride with low HDL is the signature of insulin resistance, seen in diabetes, obesity and beta blocker use.
- Alcohol is well known to raise HDL cholesterol, so it does not belong with the other three.

So regular alcohol consumption is the condition that does not fit, making it the correct exception.

**Quick Tip:** Think about which of these actually raises HDL rather than lowering it.

• • •

**11.** Healing with calcification is a feature of

- (A) Cryptococcosis
- (B) Mucormycosis
- (C) Aspergillosis
- (D) Histoplasmosis

**Correct Answer:** (D) Histoplasmosis

**SOLUTION:**

The question wants to know which fungus, once its lesions heal, leaves calcification behind, a pattern similar to old healed tuberculosis.

1. **Cryptococcosis:** forms soft, mucoid or gelatinous lesions with a weak fibrous reaction, and is mostly remembered for meningitis in immunocompromised people rather than calcified scars.
2. **Mucormycosis:** is an aggressive, blood vessel invading infection that causes tissue death quickly. It does not slow down enough to heal by calcification, and is often life threatening.
3. **Aspergillosis:** either sits as a fungus ball, an aspergilloma, inside an old cavity, or invades tissue causing necrosis and bleeding in the sick host. Calcified healed scars are not its typical picture.
4. **Histoplasmosis:** behaves much like tuberculosis. Small granulomas form in the lung, spleen and liver, and as they heal they fibrose and then calcify, giving the classic multiple tiny calcified spots seen on imaging.

Only histoplasmosis follows the slow granuloma to fibrosis to calcification sequence that produces healed calcified lesions.

Let's summarize:

- Calcified healing needs a slow, granulomatous immune response, the same pattern tuberculosis shows.
- Histoplasmosis mimics tuberculosis in this exact way, while the other three fungi cause acute necrosis or non calcifying lesions.

So histoplasmosis is the fungal infection that classically heals with calcification.

**Quick Tip:** Think of the fungal infection that mimics tuberculosis in its healing pattern.

• • •

**12.** Name the target structure in skin involved in Acne vulgaris

- (A) Sebaceous glands
- (B) Bartholin glands
- (C) Sweat glands
- (D) Hair follicles

**Correct Answer:** (A) Sebaceous glands

**SOLUTION:**

Acne vulgaris starts inside the pilosebaceous unit of the skin, but one particular gland is the real driver of the disease, and that is what this question is asking about.

1. **Sebaceous glands:** androgens push these glands to make extra sebum. The oily build up, along with thickened keratin at the follicle opening, blocks the pore and forms a comedone. Bacteria multiply in this blocked pocket and cause the inflamed lesions of acne. This is the key structure behind the disease.
2. **Bartholin glands:** found near the vaginal opening in females, and completely unrelated to facial or back acne.
3. **Sweat glands:** eccrine and apocrine sweat glands are behind conditions such as miliaria or hidradenitis suppurativa, a different disease from acne vulgaris.
4. **Hair follicles:** part of the same pilosebaceous unit and do get blocked, but they are not the gland producing the excess oily

secretion that starts the process, so they are not the primary target structure.

The sebaceous gland, driven by androgen hormones to overproduce sebum, is the structure that acne vulgaris is centred on.

Let's summarize:

- Acne begins with androgen driven sebaceous gland overactivity and excess sebum production.
- Blocked follicle plus bacterial overgrowth then produces the visible lesions.

So the target structure in acne vulgaris is the sebaceous gland.

**Quick Tip:** Think about which gland androgens stimulate to overproduce oil in acne.

• • •

**13.** On radiological investigation Bamboo spine is typically seen in

- (A) Reiter's syndrome
- (B) Ankylosing spondylitis
- (C) Psoriatic Arthritis
- (D) Gout

**Correct Answer:** (B) Ankylosing spondylitis

**SOLUTION:**

A bamboo spine is a specific X-ray description, and this question is checking which disease produces it.

1. **Reiter's syndrome:** this reactive arthritis can inflame the sacroiliac joints, but the changes are usually one sided and milder, and rarely progress all the way to a fully fused bamboo looking spine.
2. **Ankylosing spondylitis:** chronic inflammation here slowly turns the spinal ligaments into bone, bridging one vertebra to the next with syndesmophytes. Over years the whole spine fuses into a rigid column that looks like a stack of bamboo segments on X-ray, the classic bamboo spine.
3. **Psoriatic Arthritis:** spine involvement here tends to be patchy and asymmetric, with bulky non marginal syndesmophytes, a different look from the neat symmetric bamboo spine.
4. **Gout:** this disease is about uric acid crystals settling mainly in joints like the big toe, causing punched out erosions with overhanging edges, not spinal fusion.

Only ankylosing spondylitis fuses the spine end to end in the way that earns the bamboo spine description.

Let's summarize:

- Bamboo spine means bridging syndesmophytes fusing the whole spine into one rigid column.
- This is the signature radiological finding of longstanding ankylosing spondylitis.

So ankylosing spondylitis is the correct answer for the disease showing a bamboo spine.

**Quick Tip:** Think of the HLA-B27 linked disease that fuses the spine over time.

**14.** Consider the following statements regarding classic polyarteritis nodosa:

1. It is multi-system necrotising vasculitis
2. Small and medium vessels are involved
3. Pulmonary artery involvement is a characteristic feature
4. Up to 30% patients may test positive for Hepatitis B surface antigen.

Which of these statements are correct?

- (A) 1 and 2
- (B) 2 and 3
- (C) 1, 2 and 4
- (D) 2, 3 and 4

**Correct Answer:** (C) 1, 2 and 4

**SOLUTION:**

This question tests how well the definition of classic polyarteritis nodosa (PAN) is remembered, by asking which of four statements about it are true.

1. **Statement 1, multi-system necrotising vasculitis:** true.  
PAN damages arteries feeding many different organs at once, including kidney, gut, skin, nerve and muscle.
2. **Statement 2, small and medium vessels involved:** true.  
Classic PAN is a disease of medium sized muscular arteries, with some small artery involvement, though it spares the tiniest vessels like arterioles and capillaries.
3. **Statement 3, pulmonary artery involvement is characteristic:** false. One of the defining features taught about

classic PAN is that the lungs are typically spared. Lung disease points more toward microscopic polyangiitis or ANCA associated vasculitis, not classic PAN.

4. **Statement 4, up to 30% test positive for Hepatitis B surface antigen:** true. Chronic Hepatitis B infection is a recognised trigger for PAN through immune complex mediated vessel injury, and this figure is a commonly quoted association.

Three of the four statements, 1, 2 and 4, hold up against the standard description of classic PAN, while statement 3 contradicts the well known fact that the lungs are spared.

Let's summarize:

- Classic PAN affects small and medium arteries across multiple organs, and is linked to Hepatitis B in up to 30% of cases.
- It characteristically spares the lungs, so pulmonary artery involvement is not a feature.

So the statements that are correct are 1, 2 and 4.

**Quick Tip:** Remember which organ classic PAN is taught to spare.

• • •

**15.** A patient on haloperidol for psychosis develops fever, altered sensorium and labile hypertension. Drug useful in treating this patient is

- (A) Cefotaxime
- (B) Bromocriptine
- (C) Largectil
- (D) Propranolol

**Correct Answer:** (B) Bromocriptine

**SOLUTION:**

The clinical picture, fever, altered sensorium and swinging blood pressure in someone on haloperidol, is a textbook description of Neuroleptic Malignant Syndrome (NMS), and the question wants the correct treatment for it.

1. **Cefotaxime:** an antibiotic, useful only if infection were driving the fever. Nothing here points to sepsis, so this does not treat the actual problem.
2. **Bromocriptine:** a dopamine agonist. Since NMS is caused by haloperidol blocking dopamine receptors too strongly, giving a drug that directly stimulates those same receptors reverses the problem. This is a standard treatment for NMS.
3. **Largactil (chlorpromazine):** another strong dopamine blocking antipsychotic. Using it here would add to the dopamine blockade and make NMS worse, not better.
4. **Propranolol:** a beta blocker, useful for things like tremor, but it does nothing to correct the dopamine blockade that is driving this syndrome.

Only bromocriptine attacks the actual cause of NMS, which is excess dopamine receptor blockade from haloperidol.

Let's summarize:

- Fever, rigidity, autonomic instability and altered mental status on an antipsychotic points to Neuroleptic Malignant Syndrome.
- Treatment works by restoring dopamine activity, using a dopamine agonist like bromocriptine, along with supportive care.

So bromocriptine is the correct drug to treat this patient.

**Quick Tip:** Think about what class of drug can reverse haloperidol's effect on dopamine receptors.

• • •

**16.** Which of the following types of schizophrenia carries a bad prognosis?

- (A) Paranoid
- (B) Catatonic
- (C) Hebephrenic
- (D) Undifferentiated

**Correct Answer:** (C) Hebephrenic

**SOLUTION:**

The question is comparing the outlook of four schizophrenia subtypes and asking which one is known for a poor prognosis.

1. **Paranoid:** tends to start later in life, with reasonably preserved personality and functioning, and is dominated by delusions and hallucinations. This subtype has a comparatively favourable prognosis.
2. **Catatonic:** shows striking motor symptoms like stupor or excitement, but usually responds well to treatments such as benzodiazepines or ECT, so the outcome is generally decent.
3. **Hebephrenic:** begins early, develops gradually, and shows disorganised speech, behaviour and flattened affect, with poor functioning even before the illness starts. This combination of features is linked to a poor long term outcome.

4. **Undifferentiated:** a catch all category for presentations that do not fit the other patterns clearly, with an outcome usually considered in between, not specifically poor.

Hebephrenic schizophrenia stands out because of its early onset, disorganisation and weak premorbid functioning, all of which point toward a worse prognosis than the other subtypes.

Let's summarize:

- Later onset and preserved functioning, as in paranoid or catatonic types, favour a better outcome.
- Early onset with disorganised behaviour and poor premorbid adjustment, as in hebephrenic schizophrenia, points to a poor prognosis.

So hebephrenic schizophrenia is the subtype with the bad prognosis.

**Quick Tip:** Think of the subtype with early onset and disorganised behaviour.

• • •

17. A 30 year old male complains of infertility. He appears tall and has gynaecomastia. Genitalia appear normal except for bilateral small testes. His chromosomal pattern is likely to be

- (A) 45 XO
- (B) 47 XXY
- (C) 47 XYY
- (D) 46 XY

**Correct Answer:** (B) 47 XXY

### SOLUTION:

The question describes a man with infertility, tall height, breast tissue growth (gynaecomastia), and testes that are small on both sides. This picture points to a specific sex chromosome disorder.

1. **45 XO:** This is Turner syndrome, which affects females, not males, so it cannot fit this case.
2. **47 XXY:** An extra X chromosome in a male causes Klinefelter syndrome. The testes fail to grow properly, testosterone stays low, and estrogen effects give tall stature and breast enlargement, matching every feature here.
3. **47 XYY:** Men with this pattern are usually tall but have normal testes, normal fertility, and no gynaecomastia, so it does not match.
4. **46 XY:** This is the normal male karyotype and gives no reason for infertility or gynaecomastia.

The findings of small testes, gynaecomastia, tall build and infertility together point only to Klinefelter syndrome, karyotype 47 XXY.

Let's summarize:

- Small firm testes plus gynaecomastia plus infertility in a tall male is the classic Klinefelter picture.
- The extra X chromosome (47 XXY) is behind the low testosterone and impaired sperm production.

So the chromosomal pattern is 47 XXY.

**Quick Tip:** Tall male with gynaecomastia and small testes points to an extra X chromosome.

**18.** Consider the following diseases:

1. Huntington's disease
2. Cystic fibrosis
3. Sickle Cell anaemia
4. Haemophilia A

Which of the following disorders are transmitted as autosomal recessive genetic disorders?

- (A) 1, 2 and 4
- (B) 1 and 2
- (C) 2 and 3
- (D) 3 and 4

**Correct Answer:** (C) 2 and 3

**SOLUTION:**

**Step 1:** What the question is testing.

This question checks if you know the inheritance pattern of four common genetic diseases: Huntington's disease, Cystic fibrosis, Sickle Cell anaemia and Haemophilia A.

**Step 2:** The rule for autosomal recessive disease.

A disease is autosomal recessive when its gene sits on a normal numbered chromosome (not X or Y) and a person needs both copies of that gene faulty to actually get sick. One faulty copy alone is not enough.

**Step 3:** Go disease by disease.

Huntington's disease only needs one bad copy of the gene on chromosome 4, so it is dominant, not recessive.

Cystic fibrosis needs two bad copies of the CFTR gene on chromosome 7, so it is recessive and it is on an autosome.

Sickle Cell anaemia needs two bad copies of the beta globin gene on chromosome 11, so it is also autosomal recessive.

Haemophilia A comes from a bad gene on the X chromosome, so it is X linked, not autosomal, even though it behaves in a recessive way.

**Step 4: Pick the pair.**

Only Cystic fibrosis and Sickle Cell anaemia, numbers 2 and 3, satisfy both conditions: recessive and autosomal.

**Step 5: Answer.**

2 and 3, Cystic fibrosis and Sickle Cell anaemia is correct.

2 and 3

**Quick Tip:** Recall which of these four diseases need two faulty gene copies on an autosome.

• • •

**19.** A previously healthy factory worker was found unresponsive in his work place. He was afebrile, anicteric, tachypnoeic, drowsy and "blue" all over with clear lung fields and hyperdynamic cardiovascular findings. His ABG with 100% oxygen after intubation was:

pH = 7.30

pO<sub>2</sub> = 580 mm Hg

pCO<sub>2</sub> = 30 mm Hg

SaO<sub>2</sub> = 50%

What is the most likely diagnosis?

- (A) Methemoglobinemia
- (B) Adult Respiratory Distress syndrome
- (C) Carbon monoxide poisoning
- (D) Organophosphorus poisoning

**Correct Answer:** (C) Carbon monoxide poisoning

**SOLUTION:**

A factory worker is found unconscious, not feverish, not jaundiced, breathing fast, drowsy and bluish in color, with a clear chest exam and an overactive circulation. His blood gas on 100% oxygen shows a very high pO<sub>2</sub> of 580 but a measured SaO<sub>2</sub> of only 50%. This gap between a high pO<sub>2</sub> and a low SaO<sub>2</sub> is the key clue.

1. **Methemoglobinemia:** This also shows a normal or high pO<sub>2</sub> with a low true saturation, but it usually gives chocolate colored blood and cyanosis that oxygen therapy does not fix, and is not the typical picture from a factory combustion exposure.
2. **Adult Respiratory Distress Syndrome:** This disease damages the lungs directly, so oxygen levels stay low even on 100% oxygen and the chest exam is abnormal, not clear. This does not fit the clear lungs and high pO<sub>2</sub> seen here.
3. **Carbon monoxide poisoning:** Carbon monoxide grabs onto haemoglobin far more strongly than oxygen does, forming carboxyhaemoglobin. The lungs still pull in oxygen normally, so pO<sub>2</sub> reads high, but haemoglobin cannot carry it properly, so the true SaO<sub>2</sub> stays low. Factory fumes are a common source, and the drowsiness, bluish look, clear lungs and hyperdynamic heart all match.

**4. Organophosphorus poisoning:** This causes excess salivation and secretions, small pupils, a slow heart rate and muscle twitching, none of which are described here, and it does not explain the  $pO_2$  and  $SaO_2$  gap.

The combination of a high  $pO_2$  with a low measured  $SaO_2$ , plus the setting of factory work, points squarely to carbon monoxide poisoning.

Let's summarize:

- A big gap between a high  $pO_2$  and a low  $SaO_2$  on 100% oxygen suggests haemoglobin is blocked by something other than oxygen, most often carbon monoxide.
- Clear lungs plus a hyperdynamic circulation argue against a primary lung problem like ARDS.

So the most likely diagnosis is carbon monoxide poisoning.

**Quick Tip:** A high  $pO_2$  but low  $SaO_2$  gap in a factory worker points to carbon monoxide binding haemoglobin.

• • •

**20.** A patient admitted with acute organophosphorous insecticide poisoning develops ptosis, inability to lift the head and difficulty in breathing on the third day. The most likely diagnosis is

- (A) hypokalemia
- (B) inflammatory polyneuropathy
- (C) intermediate syndrome
- (D) polymyositis

**Correct Answer:** (C) intermediate syndrome

**SOLUTION:**

**Step 1: Note the timing.**

The weakness here, drooping eyelids, a neck too weak to lift the head, and breathing difficulty, starts on day three, not on day one. Timing is the biggest clue in organophosphorus poisoning questions.

**Step 2: Recall the three stages of OP poisoning.**

Stage one is the acute cholinergic crisis in the first hours, with drooling, small pupils, cramps and a slow pulse. Stage two is the intermediate syndrome, showing up roughly one to four days later. Stage three, delayed polyneuropathy, only shows up after two to three weeks.

**Step 3: Match the muscles affected.**

Intermediate syndrome hits the muscles close to the trunk, the neck flexors, and the muscles used for breathing and eye opening. That is exactly ptosis, a floppy neck, and breathing trouble, all at once, and all fitting the day three timing.

**Step 4: Cross off the distractors.**

Low potassium can weaken muscles but is not the textbook cause here and does not explain ptosis. A Guillain-Barre type polyneuropathy usually follows an infection over a longer timeline, not a pesticide exposure. Polymyositis is a slow autoimmune disease, not something that appears three days after poisoning.

**Step 5: Conclude.**

The day three combination of ptosis, weak neck flexion and breathing

difficulty after organophosphorus poisoning is the intermediate syndrome.

**Intermediate syndrome**

**Quick Tip:** Weakness of the neck, eyelids, and breathing muscles 1 to 4 days after organophosphorus poisoning has a specific name.

• • •

**21.** Hybridoma technique is used to obtain

- (A) purified antibodies
- (B) purified antigens
- (C) purified lymphocytes
- (D) purified macrophages

**Correct Answer:** (A) purified antibodies

**SOLUTION:**

The hybridoma technique is a lab method that fuses two different cells together, and the question asks what final product this method is built to supply.

1. **purified antibodies:** A hybridoma is made by fusing an antibody making B lymphocyte with a myeloma cell that can divide forever. The resulting hybrid cell line keeps churning out the exact same antibody that its parent B lymphocyte was making, giving a limitless, pure supply of one antibody, known as a monoclonal antibody. This is the true purpose of the technique.

2. **purified antigens:** Antigens are the substances given beforehand to trigger the immune response and make the B lymphocyte in the first place. They are the starting trigger, not the output of the fusion technique.
3. **purified lymphocytes:** A lymphocyte is only one of the two cells fused together to build the hybridoma. Getting more lymphocytes is not the goal of the process.
4. **purified macrophages:** Macrophages play no role in building a hybridoma and are not related to this technique at all.

Since the whole design of cell fusion is to keep a B lymphocyte's antibody-making ability alive forever in a dividing cell line, the product obtained is pure antibody.

Let's summarize:

- Hybridoma equals a B lymphocyte, which makes antibody, fused with a myeloma cell, which divides endlessly.
- The output is monoclonal antibody, meaning one pure, unlimited antibody type.

So the hybridoma technique is used to obtain purified antibodies.

**Quick Tip:** Hybridoma = B lymphocyte plus myeloma cell, made to mass produce one specific antibody.

• • •

**22.** Which of the following diseases is associated with the HLA B 27 subtype?

- (A) Addison's disease
- (B) Myasthenia gravis
- (C) Reiter's syndrome
- (D) Psoriasis

**Correct Answer:** (C) Reiter's syndrome

**SOLUTION:**

**Step 1:** Recall what HLA B27 flags.

HLA B27 is a tissue marker best known for its link to a family of joint diseases called seronegative spondyloarthropathies, meaning arthritis without rheumatoid factor in the blood.

**Step 2:** List the diseases in that family.

This family covers ankylosing spondylitis, reactive arthritis, arthritis linked to inflammatory bowel disease, and the joint form of psoriasis. Reactive arthritis was formerly called Reiter's syndrome, and shows one of the tightest HLA B27 links of all diseases.

**Step 3:** Confirm the classic triad.

Reiter's syndrome classically presents with joint inflammation, eye inflammation, and inflammation of the urethra, usually following a bowel or genital infection. This triad, together with a strong HLA B27 link, makes it the clear answer among the choices given.

**Step 4:** Check why the rest do not fit.

Addison's disease is an adrenal gland disorder with no HLA B27 tie. Myasthenia gravis involves antibodies against the neuromuscular junction and is tied more to HLA DR3, not B27. Plain psoriasis of the skin has its own separate HLA links, and only its arthritis form has a

partial, weaker HLA B27 connection compared with Reiter's syndrome.

**Step 5: Answer.**

**Reiter's syndrome** carries the strongest HLA B27 association among the choices.

**Reiter's syndrome**

**Quick Tip:** Think of the seronegative spondyloarthropathy with a triad of arthritis, conjunctivitis and urethritis.

• • •

**23.** Revised Trauma score by Champion include the following EXCEPT

- (A) Glasgow coma scale
- (B) Systolic blood pressure
- (C) Respiratory rate
- (D) Pulse rate

**Correct Answer:** (D) Pulse rate

**SOLUTION:**

The Revised Trauma Score (RTS) by Champion is a bedside score built from a fixed set of physiological measurements, and this question asks which listed item is left out of that set.

1. **Glasgow coma scale:** This is one of the three official components of the RTS, it measures the level of consciousness and carries the heaviest weight in the final score.

2. **Systolic blood pressure:** This is also one of the three official components, standing in for the state of the circulation.
3. **Respiratory rate:** This is the third official component, standing in for the state of breathing.
4. **Pulse rate:** This is not part of the Revised Trauma Score at all. The RTS is built only from Glasgow coma scale, systolic blood pressure, and respiratory rate, so pulse rate is the item left out.

Since only three variables make up the RTS, and pulse rate is not one of them, it is the correct answer to "EXCEPT".

Let's summarize:

- RTS equals Glasgow coma scale, systolic blood pressure, and respiratory rate together.
- Pulse rate belongs to other scoring tools, not the Revised Trauma Score.

So pulse rate is the parameter not included in the Revised Trauma Score.

**Quick Tip:** RTS uses only three vitals: Glasgow coma scale, systolic blood pressure, and respiratory rate.



**24.** Match List I (Clinical Conditions) with List II (Nerves involved) and select the correct answer using the codes given below the lists:

| List I (Clinical Conditions) | List II (Nerves involved) |
|------------------------------|---------------------------|
| A. Wrist drop                | 1. Ulnar nerve            |
| B. Winging of Scapula        | 2. Radial nerve           |
| C. Pointing index            | 3. Long Thoracic nerve    |
| D. Claw hand                 | 4. Median nerve           |

Codes:

- (A) A-2, B-3, C-4, D-1
- (B) A-1, B-4, C-3, D-2
- (C) A-2, B-4, C-3, D-1
- (D) A-1, B-3, C-4, D-2

**Correct Answer:** (A) A-2, B-3, C-4, D-1

**SOLUTION:**

This question links four hand or shoulder deformities to the nerve that causes each one, then asks which answer code lists all four pairs correctly.

1. **Wrist drop:** The wrist and fingers cannot extend because the radial nerve, which supplies the extensor muscles of the forearm, is damaged. So this pairs with the radial nerve.
2. **Winging of Scapula:** The shoulder blade sticks out backward because the long thoracic nerve, which supplies serratus anterior, is injured, so this pairs with the long thoracic nerve.
3. **Pointing index:** When trying to make a fist, the index finger stays pointed straight because the median nerve, which flexes the index and middle fingers, is damaged, so this pairs with the median nerve.

4. **Claw hand:** The ring and little fingers curl into a claw shape because the ulnar nerve, which controls most small hand muscles, is damaged, so this pairs with the ulnar nerve.

Putting the four pairs together gives wrist drop with radial nerve (A-2), winging of scapula with long thoracic nerve (B-3), pointing index with median nerve (C-4), and claw hand with ulnar nerve (D-1). This exact set of pairs is code (a).

Let's summarize:

- Radial nerve damage gives wrist drop, long thoracic nerve damage gives scapular winging.
- Median nerve damage gives a pointing index, ulnar nerve damage gives a claw hand.

So the correct code is A-2, B-3, C-4, D-1.

**Quick Tip:** Radial nerve gives wrist drop, long thoracic nerve gives winging of scapula, median nerve gives a pointing index, ulnar nerve gives a claw hand.

• • •

**25.** Repair of cleft lip is usually carried out

- (A) At birth
- (B) At 10 weeks of life
- (C) During 1.5 to 2 years of age
- (D) Before the child starts going to school

**Correct Answer:** (B) At 10 weeks of life

## SOLUTION:

This question checks the standard timing rule surgeons follow before they repair a cleft lip.

1. **At birth:** A newborn is not stable enough for anesthesia or surgery this early, so lip repair is not done at birth.
2. **At 10 weeks of life:** This fits the rule of tens, age about 10 weeks, weight about 10 pounds, hemoglobin about 10 g/dl, the point where the infant is considered fit for surgery.
3. **During 1.5 to 2 years of age:** This window is closer to when cleft palate repair is done, not the lip.
4. **Before the child starts going to school:** Waiting this long puts off fixing the feeding and cosmetic problems and is not standard practice.

The correct choice is repair at about 10 weeks of life, once the infant meets the rule of tens.

Let's summarize:

- The rule of tens sets the safe window for cleft lip surgery: age 10 weeks, weight 10 pounds, hemoglobin 10 g/dl.
- Cleft palate repair comes later, around 9 to 18 months, before the child starts to speak.

So cleft lip repair is usually carried out at 10 weeks of life.

**Quick Tip:** Recall the rule of tens used to time cleft lip surgery.



**26.** The treatment of choice in grade 4 subcapital fractured neck of femur in a fifty year old patient is

- (A) Pin-in-situ
- (B) Reduction
- (C) Hemiarthroplasty
- (D) Total hip replacement

**Correct Answer:** (C) Hemiarthroplasty

**SOLUTION:**

This question checks what is done for a fully displaced (grade 4) femoral neck fracture close to the hip joint in a middle aged patient.

1. **Pin-in-situ:** This holds the fracture without correcting displacement and needs the head to heal on its own blood supply, which is already damaged here, so it is unreliable.
2. **Reduction:** Realigning and fixing the fragments still depends on the torn blood vessels recovering, so union and head survival are uncertain in a grade 4 injury.
3. **Hemiarthroplasty:** This removes the damaged head and replaces it with an implant, sidestepping the blood supply problem entirely and giving quick, dependable relief.
4. **Total hip replacement:** This also treats the hip socket and is saved for patients who already have arthritis there or who are very active, which is not described in this case.

The correct choice is hemiarthroplasty, because the femoral head's blood supply is already lost in a grade 4 fracture, so replacing the head is safer than hoping it heals.

Let's summarize:

- A grade 4 subcapital fracture means the femoral head has likely lost its blood supply.
- Fixation methods rely on healing that may not happen, while hemiarthroplasty removes that risk.

So hemiarthroplasty is the treatment of choice here.

**Quick Tip:** When fixation is unreliable in a displaced subcapital fracture, think head replacement.

• • •

**27.** Which one of the following is NOT a radiological feature of osteoarthritis?

- (A) Widening of the joint space
- (B) Osteophyte formation
- (C) Subchondral sclerosis
- (D) Cyst formation

**Correct Answer:** (A) Widening of the joint space

**SOLUTION:**

This question tests the classic x-ray picture of osteoarthritis and which listed finding does not belong.

1. **Widening of the joint space:** Osteoarthritis wears down cartilage, so the joint space narrows, it never widens. This is the false statement.
2. **Osteophyte formation:** Bony spurs grow at the joint edges as the joint tries to spread load over a larger surface, a true and classic sign.

3. **Subchondral sclerosis:** The bone just under the damaged cartilage becomes denser from the extra stress, a true sign seen on x-ray.

4. **Cyst formation:** Fluid filled cystic spaces form in the bone below the joint surface, another true and recognized sign.

Since narrowing, not widening, of the joint space is what actually happens, widening of the joint space is the feature that is not seen in osteoarthritis.

Let's summarize:

- The four classic x-ray signs of osteoarthritis are joint space narrowing, osteophytes, subchondral sclerosis, and subchondral cysts.
- Widening of the joint space is the opposite of what actually happens and is not a true feature.

So the correct answer is widening of the joint space.

**Quick Tip:** Osteoarthritis narrows the joint space, it does not widen it.

• • •

**28.** A dinner-fork deformity is classically seen in

- (A) Monteggia fracture
- (B) Fracture of the scaphoid
- (C) Colles' fracture
- (D) Smith fracture

**Correct Answer:** (C) Colles' fracture

## SOLUTION:

This question checks which wrist fracture gives the wrist its classic dinner-fork shape when looked at from the side.

1. **Monteggia fracture:** This is a break of the upper ulna with the radial head slipping out of place at the elbow, an elbow region injury that does not give a dinner-fork wrist shape.
2. **Fracture of the scaphoid:** This small wrist bone fracture usually shows no visible deformity, only tenderness at the base of the thumb.
3. **Colles' fracture:** The lower fragment of the radius tilts and shifts backward, so the wrist and hand step back against the forearm, producing the classic dinner-fork silhouette.
4. **Smith fracture:** Here the lower fragment tilts forward instead, the opposite direction, and this gives a garden spade deformity, not a dinner fork.

The backward tilt and displacement seen only in a Colles' fracture is what produces the dinner-fork look, so that is the correct answer.

Let's summarize:

- Colles' fracture: dorsal tilt, dinner-fork deformity.
- Smith fracture: volar tilt, garden spade deformity, the opposite pattern.

So the dinner-fork deformity is classically seen in a Colles' fracture.

**Quick Tip:** Dorsal tilt of the distal radius fragment creates the classic dinner-fork wrist profile.



**29.** Empyema necessitatis is defined as so when

- (A) Pleural empyema is under pressure
- (B) Pleural empyema has ruptured into the bronchus
- (C) Pleural empyema has ruptured into the pericardium
- (D) Pleural empyema is showing extension to the subcutaneous tissue

**Correct Answer:** (D) Pleural empyema is showing extension to the subcutaneous tissue

**SOLUTION:**

This question is about the exact meaning of empyema necessitatis, a term for one particular way a chronic pleural empyema can spread.

1. **Pleural empyema is under pressure:** Pressure inside the pleural space does not tell us where the pus has gone, so this alone does not define the term.
2. **Pleural empyema has ruptured into the bronchus:** This describes a bronchopleural fistula, a separate and different complication from empyema necessitatis.
3. **Pleural empyema has ruptured into the pericardium:** This is not the classic pathway used to define either bronchopleural fistula or empyema necessitatis.
4. **Pleural empyema is showing extension to the subcutaneous tissue:** This matches the definition exactly, pus eroding outward through the chest wall to point under the skin, classically from a tuberculous or actinomycotic empyema.

Only the option describing pus tracking through the chest wall into the subcutaneous tissue matches the true meaning of the term.

Let's summarize:

- Empyema necessitatis: pus tracks outward through the chest wall to point under the skin.
- Bronchopleural fistula: pus ruptures inward into a bronchus, a different complication entirely.

So empyema necessitatis is defined by extension of the pus to the subcutaneous tissue.

**Quick Tip:** The word necessitatis points to pus tracking outward through the chest wall.

• • •

**30.** The following are true about bronchogenic carcinoma EXCEPT

- (A) It is the commonest malignant tumour in men
- (B) One-Lung-Anaesthesia has improved results of surgery
- (C) Most lung cancers are unresectable at presentation
- (D) Small cell carcinoma carries better survival rate

**Correct Answer:** (D) Small cell carcinoma carries better survival rate

**SOLUTION:**

This question lists four claims about lung cancer and asks which one does not hold up.

- 1. It is the commonest malignant tumour in men:** Lung cancer is a leading cancer and cancer killer in men in many countries, so this claim is true.
- 2. One-Lung-Anaesthesia has improved results of surgery:** Ventilating only one lung during chest surgery keeps the operated

lung still and out of the way, which has genuinely improved surgical outcomes, so this is true.

**3. Most lung cancers are unresectable at presentation:**

Lung cancer is usually caught late, once it has already spread, so most cases cannot be fully removed by surgery at diagnosis, another true claim.

**4. Small cell carcinoma carries better survival rate:** Small cell carcinoma spreads fast and is usually already widespread when found. Even though it shrinks well with chemotherapy and radiotherapy, its long term survival is worse, not better, than most other lung cancer types. This claim is false.

Since the first three claims hold up and only the survival claim about small cell carcinoma is wrong, that is the exception the question wants.

Let's summarize:

- Small cell lung carcinoma spreads early and has a poor long term survival despite responding to chemo and radiotherapy.
- The other three statements about frequency, anaesthesia benefit, and late presentation are all accurate.

So the false statement is that small cell carcinoma carries a better survival rate.

**Quick Tip:** Small cell lung cancer spreads early and has a poor survival rate, not a better one.



**31.** Consider the following statements. Polycystic disease of the kidneys may present with:

1. Chronic renal failure.
2. Haematuria and renal colic.
3. Hypertension.
4. Accidentally on routine examination of the abdomen.

Which of these statements are correct?

- (A) 1 and 3
- (B) 2 and 4
- (C) 1, 3 and 4
- (D) 1, 2, 3 and 4

**Correct Answer:** (A) 1 and 3

**SOLUTION:**

This question asks which listed presentations of polycystic kidney disease this paper counts as correct.

1. **1 and 3:** Chronic renal failure and hypertension are both well documented, common presentations as the cysts enlarge and damage kidney tissue and its blood flow control. This is the pair marked correct in the answer key.
2. **2 and 4:** Haematuria with renal colic and an incidental abdominal finding are also presentations described for this disease, but this combination alone is not the one selected by the key.
3. **1, 3 and 4:** Adds the incidental finding to the correct pair, but the key does not extend the answer to include this third statement.

4. **1, 2, 3 and 4:** Includes every statement. Several textbooks do describe all four as recognized presentations of this disease, but this paper's key does not mark all four as the answer.

Based on the answer key for this question, the pair of chronic renal failure and hypertension, statements 1 and 3, is taken as correct, though readers should note that haematuria and incidental discovery are also genuine presentations described elsewhere.

Let's summarize:

- Polycystic kidney disease commonly causes both chronic renal failure and hypertension as the cysts grow.
- Haematuria, renal colic, and incidental discovery on imaging are also described presentations in the wider literature.

So per this paper's key, statements 1 and 3 are the ones marked correct.

**Quick Tip:** Cyst growth in polycystic kidney disease drives both hypertension and eventual chronic renal failure.

• • •

**32.** Which one of the following is the serious complication of degenerative myopia in the eye?

- (A) Retinal detachment
- (B) Vitreous liquefaction
- (C) Myopic crescent
- (D) Posterior staphyloma

**Correct Answer:** (A) Retinal detachment

## SOLUTION:

This question is about which change seen in degenerative myopia is a true medical emergency rather than just a background structural finding.

1. **Retinal detachment:** The overstretched eyeball thins the retina and lets the vitreous pull away and tug on weak spots, which can tear the retina and lift it off, causing sudden severe vision loss. This is the serious, urgent complication.
2. **Vitreous liquefaction:** The vitreous gel becoming more watery with myopic change is a background process, not a sight-threatening event on its own.
3. **Myopic crescent:** This is a patch of tissue atrophy next to the optic disc from long standing stretching, a structural sign rather than an acute complication.
4. **Posterior staphyloma:** This outward bulge of the weakened eye wall shows severe disease but does not by itself cause a sudden vision-threatening event the way a detachment does.

Only retinal detachment causes an acute, urgent loss of vision, which is why it is the serious complication being asked about, while the other three are structural background changes.

Let's summarize:

- Degenerative myopia thins and stretches the retina, raising the risk of tears and detachment.
- Vitreous liquefaction, myopic crescent, and posterior staphyloma are structural findings, not acute emergencies by themselves.

So retinal detachment is the serious complication of degenerative myopia.

**Quick Tip:** Retinal thinning and vitreous traction in high myopia raise the risk of the most sight-threatening complication.

• • •

**33.** Which one of the following conditions does NOT cause pseudoexophthalmos?

- (A) High myopia
- (B) Lid retraction
- (C) Optic nerve glioma
- (D) Facial nerve paralysis

**Correct Answer:** (C) Optic nerve glioma

**SOLUTION:**

This question checks if you can tell apart a real forward push of the eyeball from a false look of bulging. Pseudoexophthalmos means the eye only appears to protrude, the globe has not actually moved out of its socket.

1. **High myopia:** A very long eyeball from myopia makes the eye look bigger and more prominent, but no mass pushes it forward. This is a false, pseudo picture.
2. **Lid retraction:** When the upper lid rides high, as in thyroid eye disease, more sclera and cornea are exposed, so the eye looks like it is bulging even though it sits in its normal place. Another pseudo picture.

3. **Optic nerve glioma:** This is a tumour growing right behind the eyeball inside the orbit. It takes up space and mechanically shoves the eyeball forward. That is genuine, true exophthalmos, not a pseudo finding.
4. **Facial nerve paralysis:** A weak facial nerve cannot close the eyelid properly (lagophthalmos), so the eye stays open and looks like it is staring or bulging, again without the globe moving forward. Pseudo picture.

Three of the four options only change how the eye looks without moving the globe, while the optic nerve glioma is a real space occupying mass that produces true proptosis.

Let's summarize:

- Pseudoexophthalmos looks like bulging but the eyeball stays in its normal position.
- True exophthalmos is caused by an actual orbital mass, like an optic nerve glioma, pushing the eye forward.

So the condition that does not cause pseudoexophthalmos is optic nerve glioma, since it causes true exophthalmos instead.

**Quick Tip:** Think about which option truly pushes the eyeball forward instead of just changing how it looks.

• • •

**34.** Hoarseness secondary to bronchogenic carcinoma is usually due to extension of the tumour into

- (A) Vocal cord
- (B) Superior laryngeal nerve
- (C) Left recurrent laryngeal nerve
- (D) Right vagus nerve

**Correct Answer:** (C) Left recurrent laryngeal nerve

**SOLUTION:**

This question tests why lung cancer often causes a hoarse voice. The key lies in the path of the nerve that moves the vocal cords.

1. **Vocal cord:** The cord itself is rarely invaded directly by a lung tumour sitting in the chest, so this is not the usual route.
2. **Superior laryngeal nerve:** Damage here changes voice pitch and causes fatigue of the voice, not the classic hoarseness tied to lung cancer.
3. **Left recurrent laryngeal nerve:** This nerve dips down into the chest and loops under the aortic arch before climbing back to the larynx. That long detour through the chest puts it directly in the path of a bronchogenic carcinoma or its spread to mediastinal nodes.
4. **Right vagus nerve:** The right recurrent branch loops much higher, around the subclavian artery near the neck, away from most lung tumours, so it is rarely involved.

Because the left recurrent laryngeal nerve runs so far down into the chest, it is the structure most often trapped or invaded by lung cancer, and its damage paralyses the left vocal cord, producing hoarseness.

Let's summarize:

- The left recurrent laryngeal nerve has a long intrathoracic course under the aortic arch.
- This makes it the nerve most vulnerable to invasion by bronchogenic carcinoma.

So hoarseness from bronchogenic carcinoma is usually due to extension of the tumour into the left recurrent laryngeal nerve.

**Quick Tip:** Think about which recurrent laryngeal nerve travels longest inside the chest.

• • •

**35.** Multiple perforations of tympanic membrane is a feature of

- (A) Trauma
- (B) Tuberculous otitis media
- (C) C.S.O.M.
- (D) Aspergillosis

**Correct Answer:** (B) Tuberculous otitis media

**SOLUTION:**

This question asks which ear condition typically shows many small perforations across the eardrum instead of just one hole. Let's go through the choices.

1. **Trauma:** An injury like a slap or a poking object usually tears a single hole at one point on the drum, not several scattered ones.
2. **Tuberculous otitis media:** TB infection attacks the eardrum at more than one spot at the same time, so several small perforations form together and later merge into one large ragged

hole. The ear also produces thin, painless discharge, and hearing loss is often worse than the perforation size would suggest, with pale granulation tissue inside the ear.

3. **C.S.O.M.:** Ordinary chronic suppurative otitis media usually leaves one central or marginal perforation, not multiple ones.
4. **Aspergillosis:** This fungal infection mostly fills the ear canal with fungal debris and does not typically punch multiple holes in the drum by itself.

Only tuberculous otitis media is known for causing several perforations at once that later join up into a single defect.

Let's summarize:

- A single perforation points to trauma or ordinary C.S.O.M.
- Multiple perforations, painless discharge, and disproportionate deafness point to tuberculous otitis media.

So multiple perforations of the tympanic membrane are a feature of tuberculous otitis media.

**Quick Tip:** Think about the ear infection known for painless discharge and hearing loss out of proportion to the perforation.

• • •

**36.** The following are the clinical features of raised intracranial tension EXCEPT

- (A) Headache
- (B) Insomnia
- (C) Bradycardia
- (D) Papilloedema

**Correct Answer:** (B) Insomnia

**SOLUTION:**

This question wants the one option that does not belong on the list of signs of raised intracranial tension. Let's check each one.

1. **Headache:** A classic feature, typically worse on waking and made worse by coughing or straining.
2. **Insomnia:** Raised pressure inside the skull usually causes drowsiness and a falling level of alertness as it gets worse, not trouble falling asleep. This does not fit the usual picture.
3. **Bradycardia:** Part of the Cushing reflex, a slow pulse together with high blood pressure, appearing as the brainstem gets compressed by the rising pressure.
4. **Papilloedema:** Swelling of the optic disc from blocked flow along the optic nerve, a direct sign found on eye examination and part of the classic triad with headache and vomiting.

Three of the four, headache, bradycardia, and papilloedema, are textbook features. Insomnia does not fit since raised pressure causes sleepiness, not wakefulness.

Let's summarize:

- Headache, papilloedema, and bradycardia are established features of raised intracranial tension.
- Insomnia is not, since drowsiness rather than sleeplessness is what actually occurs.

So the exception among the clinical features of raised intracranial tension is insomnia.

**Quick Tip:** Recall that raised intracranial tension causes drowsiness, not difficulty sleeping.

• • •

**37.** Which one of the following is NOT true regarding obstetric brachial plexus palsy?

- (A) Upper roots are mostly affected
- (B) Results from traction on shoulder girdle
- (C) Good progress with immediate surgery
- (D) Good prognosis with conservative management

**Correct Answer:** (C) Good progress with immediate surgery

**SOLUTION:**

This question is about obstetric brachial plexus palsy and asks which statement about it is false. Let's work through each one.

1. **Upper roots are mostly affected:** True. The C5 and C6 roots are stretched the most when the head and shoulder are pulled apart during a hard delivery, giving the typical Erb's palsy pattern.
2. **Results from traction on shoulder girdle:** True. The injury is a stretch injury of the neck and shoulder girdle nerves during birth, often linked with shoulder dystocia.
3. **Good progress with immediate surgery:** False. Doctors do not operate right away. They wait and watch for around three to six months with gentle physiotherapy, since most babies recover well on their own. Surgery is kept in reserve for the small number who show no recovery by then, not offered immediately.

**4. Good prognosis with conservative management:** True.

Most infants, around eight to nine in ten, recover well with simple conservative care alone.

The one statement that does not hold up is the claim about immediate surgery giving good progress, since conservative treatment comes first and works for the large majority of babies.

Let's summarize:

- Obstetric brachial plexus palsy mostly affects the upper roots from traction during delivery.
- Most cases recover with conservative management, not immediate surgery.

So the false statement is that there is good progress with immediate surgery.

**Quick Tip:** Remember most obstetric brachial plexus palsy cases are watched and treated conservatively first.

• • •

**38.** Ramstedts operation is the surgical procedure for

- (A) Congenital atresia of duodenum
- (B) Hallux valgus
- (C) Congenital hypertrophic pyloric stenosis
- (D) Atresia of bile duct

**Correct Answer:** (C) Congenital hypertrophic pyloric stenosis

**SOLUTION:**

This question asks which condition Ramstedt's operation is used to treat. Let's look at each option.

1. **Congenital atresia of duodenum:** This blockage needs the two blind ends of bowel joined together surgically, a duodenoduodenostomy, not a pyloromyotomy.
2. **Hallux valgus:** A bent big toe deformity, corrected with a bone realignment operation on the foot, unrelated to the stomach or pylorus.
3. **Congenital hypertrophic pyloric stenosis:** The muscle ring at the stomach outlet, the pylorus, grows too thick in some infants and blocks milk from passing through, causing projectile vomiting a few weeks after birth. Ramstedt's operation, known as pyloromyotomy, cuts through this thickened muscle layer lengthwise, without opening the inner lining, so milk can pass freely again.
4. **Atresia of bile duct:** This needs biliary surgery such as a Kasai procedure to restore bile drainage, not a pyloromyotomy.

Only the pyloric stenosis option matches what Ramstedt's operation actually does, splitting the thickened pyloric muscle.

Let's summarize:

- Ramstedt's operation is a pyloromyotomy that splits the thickened pyloric muscle.
- The other three conditions need entirely different operations.

So Ramstedt's operation is the surgical procedure for congenital hypertrophic pyloric stenosis.

**Quick Tip:** Think of the operation that splits the thickened pyloric muscle in infants with projectile vomiting.

• • •

**39.** The commonest cause of bleeding per rectum in children is

- (A) Rectal polyp
- (B) Intussusception
- (C) Meckel's diverticulum
- (D) Haemorrhoids

**Correct Answer:** (A) Rectal polyp

**SOLUTION:**

This question asks for the single commonest cause of rectal bleeding in children, comparing four possible causes.

1. **Rectal polyp:** A small, benign, solitary juvenile polyp, most often seen between two and ten years of age, has a fragile surface that bleeds easily as stool passes over it, giving painless bright red blood on the stool or toilet paper. Because this happens so often across this wide age range, it is the leading cause overall.
2. **Intussusception:** One part of the bowel telescopes into the next, mainly in infants under two years, and causes colicky pain, vomiting, and red currant jelly stools. It is a surgical emergency but is not the most frequent cause of rectal bleeding across all childhood ages.
3. **Meckel's diverticulum:** A remnant pouch from fetal life that can contain acid making tissue, leading to sudden, painless, sometimes heavy rectal bleeding, mainly in infants and toddlers.

It is an important cause but is outnumbered overall by juvenile polyps.

4. **Haemorrhoids:** Rare in children, usually linked with straining from constipation, and give only small streaks of blood, not a major cause of significant bleeding.

When all ages of childhood are considered together, juvenile rectal polyps bleed often enough and are common enough to be the leading cause, even though Meckel's diverticulum and intussusception matter more in the youngest infants.

Let's summarize:

- Meckel's diverticulum and intussusception are important causes mainly in infants.
- Juvenile rectal polyps are the overall commonest cause of painless rectal bleeding across childhood.

So the commonest cause of bleeding per rectum in children is a rectal polyp.

**Quick Tip:** Think of the small, benign growth that bleeds painlessly in young children between two and ten years.

• • •

**40.** Consider the following statements: Before Elective Operation ECG may evaluate

1. heart rate
2. atrial fibrillations
3. heart-block
4. recent myocardial infarction

Which of these statements are correct?

- (A) 1, 2 and 4
- (B) 2, 3 and 4
- (C) 1 and 3
- (D) 1, 2, 3 and 4

**Correct Answer:** (D) 1, 2, 3 and 4

**SOLUTION:**

This question checks what a routine ECG before an elective operation can actually show. Let's test each item on the list.

1. **Heart rate:** Counting beats over a fixed strip of ECG paper gives the heart rate directly, so this is evaluated.
2. **Atrial fibrillation:** This rhythm shows an irregularly irregular pattern with no clear P waves, a pattern that stands out clearly on ECG.
3. **Heart block:** Delay or interruption of the signal between the atria and ventricles shows up as a prolonged PR interval or a mismatch between P waves and QRS complexes on the tracing.
4. **Recent myocardial infarction:** A recent heart attack leaves marks on the ECG such as ST changes, T wave inversion, or new Q waves, all detectable on a routine tracing.

Every one of the four things listed, rate, atrial fibrillation, heart block, and a recent infarction, can be picked up on an ordinary preoperative ECG.

Let's summarize:

- An ECG reflects rate, rhythm, conduction, and any recent infarct changes.

- All four listed findings are within what a preoperative ECG can evaluate.

So before an elective operation, an ECG may evaluate heart rate, atrial fibrillation, heart block, and recent myocardial infarction, meaning statements 1, 2, 3 and 4 are all correct.

**Quick Tip:** Check whether each finding, rate, rhythm, conduction, and infarction, shows up on a standard ECG trace.

• • •

**41.** Which one of the following odontomes is a locally invasive malignant tumour?

- (A) Odontogenic myxoma
- (B) Fibromatous epulis
- (C) Dentigerous cyst
- (D) Ameloblastoma

**Correct Answer:** (D) Ameloblastoma

**SOLUTION:**

This question checks which lesion among common odontogenic lesions grows into the jaw bone like a tumour, instead of staying as a simple cyst or a surface swelling.

1. **Odontogenic myxoma:** A benign tumour of the tooth forming connective tissue. It can expand the jaw but is not the classic example used for locally invasive behaviour.
2. **Fibromatous epulis:** A fibrous lump on the gum caused by ongoing irritation, such as from a denture or calculus. It sits on

the surface and does not eat into bone.

3. **Dentigerous cyst:** A cyst that grows around the crown of a tooth that has not erupted. It enlarges the jaw slowly through fluid pressure, not through tumour cell invasion.
4. **Ameloblastoma:** A tumour of odontogenic epithelium. Even though it is called benign under the microscope, it grows in finger like extensions into the cancellous bone and comes back if not removed with a wide margin. This is why textbooks describe it as locally invasive.

The correct choice is ameloblastoma, since it is the one lesion on this list that is treated like a locally aggressive tumour rather than a cyst or a reactive growth.

Let's summarize:

- Cysts like the dentigerous cyst grow by fluid pressure, not by invading tissue.
- Ameloblastoma needs wide surgical margins because it invades bone locally, unlike the other options here.

So the odontome that is a locally invasive tumour is ameloblastoma.

**Quick Tip:** Think of the odontogenic lesion that needs wide bone resection, not simple curettage.

• • •

42.

Match List I (Cells) with List II (Tumours that develop from them) and select the correct answer using the codes given below the lists.

| List I (Cells)          | List II (Tumours that develop from them) |
|-------------------------|------------------------------------------|
| A. Leydig cells         | 1. Carcinoid tumour                      |
| B. B cells              | 2. Medullary carcinoma                   |
| C. Parafollicular cells | 3. Interstitial cell tumour              |
| D. Argentaffin cells    | 4. Insulinoma                            |

(A) A-1, B-4, C-2, D-3

(B) A-3, B-2, C-1, D-4

(C) A-1, B-2, C-4, D-3

(D) A-3, B-4, C-2, D-1

**Correct Answer:** (D) A-3, B-4, C-2, D-1

**SOLUTION:**

This question tests whether you know which tumour arises from which named cell type, then asks you to pick the code that lines them up correctly.

- 1. Leydig cells:** These are the testosterone producing cells of the testis, also called interstitial cells. A tumour built from them is named an interstitial cell tumour, so A goes with 3.
- 2. B cells:** These are the insulin secreting cells of the pancreatic islets. A tumour of these cells that oversecretes insulin is an insulinoma, so B goes with 4.
- 3. Parafollicular cells:** Also called C cells of the thyroid, these make calcitonin. Their tumour is medullary carcinoma of the thyroid, so C goes with 2.

4. **Argentaffin cells:** These serotonin containing cells of the gut give rise to carcinoid tumours, so D goes with 1.

Putting these together gives A-3, B-4, C-2, D-1, which is exactly what code (d) states.

Let's summarize:

- Interstitial cell tumour is simply the Leydig cell tumour of the testis under another name.
- Insulinoma, medullary carcinoma, and carcinoid tumour are the classic tumours of B cells, C cells, and argentaffin cells respectively.

So the matching code that fits is (d), A-3, B-4, C-2, D-1.

**Quick Tip:** Match each cell to the tumour that carries its own name, such as interstitial cell tumour for Leydig cells.

• • •

43.

Match List I (Clinical signs) with List II (Clinical description) and select the correct answer using the codes given below the lists.

| List I (Clinical signs) | List II (Clinical description)                       |
|-------------------------|------------------------------------------------------|
| A. Balance's sign       | 1. Supraclavicular node in visceral malignancy       |
| B. Kehr's sign          | 2. Referred pain in left shoulder in splenic trauma  |
| C. Cullen's sign        | 3. Shifting dullness in flanks in splenic trauma     |
| D. Trosier's sign       | 4. Periumbilical discoloration in acute pancreatitis |

- (A) A-3, B-2, C-1, D-4
- (B) A-2, B-3, C-4, D-1
- (C) A-2, B-3, C-1, D-4
- (D) A-3, B-2, C-4, D-1

**Correct Answer:** (D) A-3, B-2, C-4, D-1

**SOLUTION:**

This question is a straight recall of four named clinical signs used in surgery, then asks for the code that pairs each sign with its correct description.

1. **Balance's sign:** A fixed area of dullness in the left flank from a clotted blood collection around a damaged spleen, so it pairs with the flank finding, item 3.
2. **Kehr's sign:** Shoulder tip pain from diaphragmatic irritation when the spleen bleeds, so it pairs with the shoulder pain description, item 2.
3. **Cullen's sign:** A bruise like discoloration around the navel from blood tracking under the skin, seen in severe pancreatitis, so it pairs with item 4.
4. **Trosier's sign:** A hard node above the collar bone that warns of an internal cancer, so it pairs with item 1.

Putting these four pairs together gives A-3, B-2, C-4, D-1, which is exactly code (d).

Let's summarize:

- Kehr's sign and Balance's sign both come from splenic trauma, but one is shoulder pain and the other is flank dullness.

- Cullen's sign is a skin sign of internal bleeding, while Trosier's sign points to malignancy, not trauma.

So the matching code that fits is (d), A-3, B-2, C-4, D-1.

**Quick Tip:** Kehr's sign is shoulder pain, Cullen's sign is a belly button bruise, and Trosier's sign is a neck node from a hidden cancer.

• • •

**44.** The ideal temperature of water to cool a burnt surface is

- (A) 15°C
- (B) 10°C
- (C) 8°C
- (D) 6°C

**Correct Answer:** (A) 15°C

**SOLUTION:**

**Step 1:** Recall the purpose of cooling a burn.

Cooling takes away the heat still trapped in the skin right after a burn, which limits how deep the injury becomes.

**Step 2:** Recall why very cold water is avoided.

Ice cold water can squeeze shut the small vessels in the skin around the burn and can drop the body temperature too much if a large area is cooled, both of which can make the wound worse instead of better.

**Step 3:** Recall the recommended value.

Teaching on burns first aid sets the target at around 15 degrees

Celsius, applied by running water for about fifteen to twenty minutes.

**Step 4: Rule out the other values.**

10, 8, and 6 degrees Celsius are all colder than this target range and carry the added risk of vessel narrowing and body cooling.

**Step 5: Conclude.**

So the ideal cooling temperature for a burnt surface is 15 degrees Celsius.

**Quick Tip:** Cool, not ice cold, water is used to treat a fresh burn.

• • •

**45.** The operation of choice for a retrocaval ureter is

- (A) Cutting and suturing the inferior vena cava
- (B) Cutting and suturing the ureter
- (C) Anderson-Hynes pyeloplasty
- (D) Ureterocystoplasty

**Correct Answer:** (B) Cutting and suturing the ureter

**SOLUTION:**

A retrocaval ureter is a birth defect where the right ureter takes a wrong turn behind the inferior vena cava (IVC), which can block urine flow. The question asks which surgery fixes this.

1. **Cutting and suturing the IVC:** The IVC itself is normal here, it is only the ureter that has an abnormal path. Cutting a major vein carries needless bleeding risk, so this is not done.

2. **Cutting and suturing the ureter:** The ureter is divided at the point where it loops behind the IVC, brought forward to lie in its normal position in front of the IVC, and stitched back together. This clears the obstruction while leaving the IVC untouched, making it the actual operation of choice.
3. **Anderson-Hynes pyeloplasty:** This surgery treats narrowing at the pelviureteric junction, a completely different site and cause of obstruction, so it does not apply here.
4. **Ureterocystoplasty:** This is a bladder enlargement procedure using ureteric tissue, unrelated to correcting an abnormal ureteric course.

The correct operation is division and reanastomosis of the ureter in front of the IVC, so the answer is cutting and suturing the ureter.

Let's summarize:

- Retrocaval ureter is a ureteric problem, so the surgery is done on the ureter, not the vein.
- Pyeloplasty and ureterocystoplasty treat different conditions and do not fix a retrocaval course.

So the operation of choice is cutting and suturing the ureter.

**Quick Tip:** The fix targets the ureter's abnormal path, not the normal inferior vena cava.



46.

**Assertion (A):** Splenectomised patients are at increased risk of septicaemia.

**Reason (R):** Splenectomised patients frequently have an increase in white cell and platelet counts.

- (A) Both A and R are true and R is the correct explanation of A
- (B) Both A and R are true but R is NOT the correct explanation of A
- (C) A is true but R is false
- (D) A is false but R is true

**Correct Answer:** (B) Both A and R are true but R is NOT the correct explanation of A

**SOLUTION:**

This assertion-reason question checks two separate facts about patients who have had a splenectomy, then asks if the second fact explains the first.

1. **Truth of the assertion:** The spleen clears encapsulated bacteria like pneumococcus from the blood and supports antibody production. Once it is removed, these bacteria are cleared far less efficiently, so splenectomised patients do carry a genuine, well documented higher risk of severe septicaemia. The assertion is true.
2. **Truth of the reason:** After splenectomy, platelet and white cell counts commonly rise for some weeks, since the spleen no longer removes older cells from the blood. Taken alone, this fact is also true.
3. **Does the reason explain the assertion:** The septicaemia risk is driven by the loss of bacterial filtering and reduced antibody

response, not by a rise in cell counts. A high platelet or white cell count does not cause infection. So the reason, though true, is not the actual cause of the assertion.

Both statements hold up on their own, but the second does not account for the first.

Let's summarize:

- Splenectomy raises infection risk mainly through loss of bacterial clearance and antibody support.
- The rise in blood counts after splenectomy is a separate, unrelated effect of the surgery.

So both A and R are true, but R does not correctly explain A.

**Quick Tip:** The infection risk comes from loss of splenic filtering, not from the rise in blood counts.

• • •

47.

**Assertion (A):** Breast conserving treatment is NOT applicable for lobular carcinoma of the breast.

**Reason (R):** Lobular carcinoma is multifocal in origin.

- (A) Both A and R are true and R is the correct explanation of A
- (B) Both A and R are true but R is NOT the correct explanation of A
- (C) A is true but R is false
- (D) A is false but R is true

**Correct Answer:** (A) Both A and R are true and R is the correct explanation of A

## SOLUTION:

This question links a surgical treatment choice to a growth pattern of invasive lobular carcinoma of the breast.

1. **Growth pattern (the reason):** Lobular carcinoma cells infiltrate breast tissue in thin single file lines rather than forming one clear lump. This makes it more likely to appear at several points in the breast at once, that is, to be multifocal or multicentric. This statement is true.
2. **Treatment implication (the assertion):** Because the disease is often spread across more than one area, a single lumpectomy struggles to remove it all with clear margins and an acceptable cosmetic outcome. Surgeons have therefore traditionally leaned toward mastectomy rather than breast conserving treatment for lobular carcinoma. This statement is also true.
3. **Connecting the two:** The multifocal nature described in the reason is precisely why breast conserving surgery falls short here, so the reason directly explains the assertion.

Both statements are correct, and the second logically supports the first.

Let's summarize:

- Lobular carcinoma often involves multiple sites in one breast.
- This multifocal spread is the reason mastectomy is favoured over breast conserving surgery for it.

So both A and R are true, and R correctly explains A.

**Quick Tip:** Lobular carcinoma often grows in several spots at once, which works against breast conserving surgery.

• • •

48.

**Assertion (A):** Secondary haemorrhage occurs 7 to 14 days after an operation.

**Reason (R):** Haemorrhage is due to the slipping of a ligature or dislodgement of a clot.

- (A) Both A and R are true and R is the correct explanation of A
- (B) Both A and R are true but R is NOT the correct explanation of A
- (C) A is true but R is false
- (D) A is false but R is true

**Correct Answer:** (C) A is true but R is false

**SOLUTION:**

This question separates the timing of secondary haemorrhage from its actual cause.

1. **Timing (the assertion):** Surgical bleeding is grouped by when it happens. Secondary haemorrhage is the bleed that shows up roughly 7 to 14 days after the operation, once the patient seemed to be recovering well. This timing matches the assertion, so it is true.
2. **Suggested cause (the reason):** A slipped ligature or a clot that comes loose is what causes bleeding in the first 24 hours after surgery, known as reactionary haemorrhage, often linked to a rise in blood pressure as anaesthesia wears off.

**3. Actual cause of secondary haemorrhage:** By the time a week or two has passed, the real driver of bleeding is wound infection. Pus and inflammation slowly weaken the wall of a nearby vessel until it erodes and bleeds. This is very different from a slipped ligature.

So the reason given describes reactionary haemorrhage, not secondary haemorrhage, which makes the reason false while the assertion about timing stays correct.

Let's summarize:

- Reactionary haemorrhage is early and caused by a slipped ligature or dislodged clot.
- Secondary haemorrhage is later, around 7 to 14 days, and caused by infection eroding a vessel.

So A is true but R is false.

**Quick Tip:** Secondary haemorrhage is caused by infection eroding a vessel, not by a slipped ligature.

• • •

**49.**

**Assertion (A):** Diabetic ulcer is a trophic ulcer.

**Reason (R):** It is caused by ischaemia and anaesthesia.

- (A) Both A and R are true and R is the correct explanation of A  
(B) Both A and R are true but R is NOT the correct explanation of A  
(C) A is true but R is false  
(D) A is false but R is true

**Correct Answer:** (A) Both A and R are true and R is the correct explanation of A

**SOLUTION:**

**Step 1: Recall what a trophic ulcer is.**

A trophic ulcer, sometimes called a perforating ulcer, develops at a pressure bearing point when the part has lost feeling and does not get enough blood. The classic example is a diabetic foot ulcer, so the Assertion fits the known definition and is true.

**Step 2: Work through the Reason on its own.**

In diabetes, nerve damage removes the warning signal of pain, so repeated small injuries pass unnoticed, giving the anaesthesia part of the Reason. Vessel damage from diabetes cuts down blood flow, so the tissue cannot heal those injuries, giving the ischaemia part. Both halves of the Reason are accurate descriptions of diabetic ulcer formation.

**Step 3: Join Assertion and Reason.**

Since the very features named in the Reason, numbness and poor perfusion, are what make a diabetic ulcer a trophic ulcer, the Reason is not just true on its own, it actually explains the Assertion.

**Step 4: Eliminate the remaining choices.**

It cannot be the option where R fails to explain A, because the link is direct. It cannot be the option where R is false, because R is accurate. It cannot be the option where A is false, because A is accurate too.

**Final Answer:**

Both the Assertion and the Reason are true, and the Reason is the correct explanation of the Assertion.

**Quick Tip:** Think about what causes numbness and poor healing in a diabetic foot.

• • •

50.

**Assertion (A):** H. Pylori eradication is the only regimen that promotes healing and prevents relapse in peptic ulcer disease.

**Reason (R):** H. Pylori is the only etiological factor in peptic ulcer.

- (A) Both A and R are true and R is the correct explanation of A
- (B) Both A and R are true but R is NOT the correct explanation of A
- (C) A is true but R is false
- (D) A is false but R is true

**Correct Answer:** (C) A is true but R is false

**SOLUTION:**

**Step 1: Judge the Assertion by itself.**

Clearing H. Pylori with a proper eradication regimen does two things that simple antacid treatment cannot, it heals the existing ulcer and cuts down future relapse rates sharply. This matches what is known about peptic ulcer management, so the Assertion stands as true.

**Step 2: Judge the Reason by itself.**

Calling H. Pylori the only cause of peptic ulcer ignores other well documented causes. NSAID use damages the stomach lining directly and is a leading cause of ulcers in people without H. Pylori infection.

Zollinger Ellison syndrome, driven by a gastrin secreting tumour, is another rare but real cause. So the Reason is false.

**Step 3:** Compare the two.

A true Assertion paired with a false Reason means the Reason gives no valid support to the Assertion, it is simply wrong on its own terms.

**Step 4:** Remove the wrong codes.

Both options that need R to be true fail here. The option that needs A to be false also fails, since eradication therapy really is effective and disease specific in this way.

**Final Answer:**

The Assertion is true while the Reason is false.

**Quick Tip:** Remember that NSAIDs are also a common cause of peptic ulcers, not just H. Pylori.

• • •

51.

**Assertion (A):** A person who hears voices talking to him even when no one is present is likely to be suffering from schizophrenia.

**Reason (R):** Primary delusions are characteristic of schizophrenia.

- (A) Both A and R are true and R is the correct explanation of A
- (B) Both A and R are true but R is NOT the correct explanation of A
- (C) A is true but R is false
- (D) A is false but R is true

**Correct Answer:** (B) Both A and R are true but R is NOT the correct explanation of A

**SOLUTION:**

**Step 1:** Look at the Assertion in isolation.

Voices heard with no real speaker present are auditory hallucinations. This is one of the textbook first rank symptoms used to recognise schizophrenia, so the statement is medically accurate.

**Step 2:** Look at the Reason in isolation.

Primary delusions, meaning false beliefs that appear out of nowhere without any preceding event to explain them, are also listed among the classic features of schizophrenia. Taken alone, this statement is correct too.

**Step 3:** Test whether one explains the other.

Hallucinations belong to perception, delusions belong to belief and thought content. Both can appear in the same patient with schizophrenia, but a delusion does not cause or account for a hallucination, they are separate symptom domains sitting side by side under the same diagnosis. So the Reason fails to explain the Assertion even though it is true.

**Step 4:** Clear away the other codes.

The code needing R to explain A is wrong for the reason above. The code needing A false is wrong, since hearing voices really does point toward schizophrenia. The code needing R false is wrong, since primary delusions genuinely occur in schizophrenia.

**Final Answer:**

Both statements are true, and the Reason is not a correct explanation of the Assertion.

**Quick Tip:** Hallucinations and delusions are different symptoms; one does not explain the other.

• • •

52.

**Assertion (A):** Acute gouty arthritis is a common side effect of pyrazinamide therapy.

**Reason (R):** Pyrazinamide can cause hyperuricemia.

- (A) Both A and R are true and R is the correct explanation of A
- (B) Both A and R are true but R is NOT the correct explanation of A
- (C) A is true but R is false
- (D) A is false but R is true

**Correct Answer:** (A) Both A and R are true and R is the correct explanation of A

**SOLUTION:**

**Step 1:** Confirm the Assertion from drug knowledge.

Among the standard anti tubercular drugs, pyrazinamide has a specific reputation for bringing on acute gout in some patients during treatment. This makes the Assertion a correct statement.

**Step 2:** Confirm the Reason from the same drug's action.

The drug's breakdown product competes with uric acid for excretion by the kidney tubules, so less uric acid leaves the body and blood levels rise. This rise in blood uric acid is what hyperuricemia means,

so the Reason is also correct.

**Step 3: Connect cause and effect.**

Gout attacks happen when uric acid crystals build up in a joint, and that build up needs high blood uric acid in the first place. Since pyrazinamide's main way of causing gout is exactly by raising uric acid, the Reason is not just true, it is the actual explanation for the Assertion.

**Step 4: Drop the remaining codes.**

The code that keeps R true without it explaining A does not apply, since the mechanism is a direct chain. The codes that mark either statement false do not apply either, since both are pharmacologically sound.

**Final Answer:**

Both the Assertion and Reason are true, with the Reason correctly explaining the Assertion.

**Quick Tip:** Pyrazinamide blocks uric acid excretion, and high uric acid is what causes gout.

...

53.

**Assertion (A):** Hyperkalemia is not a feature of ACTH deficiency (secondary adrenal insufficiency).

**Reason (R):** ACTH increases potassium reabsorption by the distal renal tubule.

- (A) Both A and R are true and R is the correct explanation of A
- (B) Both A and R are true but R is NOT the correct explanation of A
- (C) A is true but R is false
- (D) A is false but R is true

**Correct Answer:** (C) A is true but R is false

**SOLUTION:**

**Step 1: Separate cortisol control from potassium control.**

ACTH deficiency mainly cuts down cortisol output, since ACTH's chief job is to drive the cortisol producing part of the adrenal gland. The salt and potassium regulating hormone, aldosterone, has its own separate control system built around blood pressure, sodium level, and potassium level, running through the renin angiotensin pathway. Because that system does not depend on ACTH, aldosterone output continues close to normal even when ACTH is low.

**Step 2: Trace what that means for potassium.**

With aldosterone still working, the kidney keeps pushing potassium out into the urine as usual, so blood potassium stays in the normal range. This is why hyperkalemia is not typically seen in secondary adrenal insufficiency, unlike in primary adrenal failure, where aldosterone is also lost. The Assertion is therefore true.

**Step 3: Check the claim about ACTH and the tubule.**

The Reason says ACTH raises potassium reabsorption at the distal tubule, but ACTH does not act directly on the kidney tubule at all, and the hormone that does act there, aldosterone, works to remove potassium from the blood rather than hold onto it. So the Reason is incorrect on both counts.

**Step 4:** Put it together and clear the other codes.

A true Assertion resting on preserved aldosterone cannot be explained by a false claim about ACTH acting on the tubule. This rules out both codes needing R true, and it rules out the code needing A false, since hyperkalemia really is absent here.

**Final Answer:**

The Assertion is true while the Reason is false, based on standard adrenal physiology since the printed key was unreadable.

**Quick Tip:** Remember that aldosterone, not ACTH, is the hormone that controls potassium at the distal tubule.

• • •

54.

**Assertion (A):** In complete transposition of the great arteries, compatibility with life requires that communication exists between the pulmonary and systemic circulation.

**Reason (R):** In complete transposition of great arteries, the aorta arises from the right ventricle and the pulmonary artery arises from the left ventricle.

- (A) Both A and R are true and R is the correct explanation of A
- (B) Both A and R are true but R is NOT the correct explanation of A
- (C) A is true but R is false
- (D) A is false but R is true

**Correct Answer:** (A) Both A and R are true and R is the correct explanation of A

## **SOLUTION:**

### **Step 1:** Picture the normal circulation first.

Normally blood flows in a single loop, right side of the heart to lungs to left side of the heart to body and back again, so oxygen picked up in the lungs always reaches the body.

### **Step 2:** Picture what transposition does to that loop.

In complete transposition, the aorta sits on the right ventricle and the pulmonary artery sits on the left ventricle, the opposite of normal. This splits the single loop into two closed loops running in parallel, one just cycling deoxygenated blood between the body and the right heart, the other just cycling oxygenated blood between the lungs and the left heart.

### **Step 3:** See why survival needs a connection.

With two sealed parallel loops, oxygenated blood never crosses into the body's loop unless there is a shunt joining the two, through a patent ductus, a hole in the atrial wall, or a hole in the ventricular wall. So the Assertion, that life needs such a communication, is true, and it is true precisely because of the vessel arrangement given in the Reason.

### **Step 4:** Confirm the Reason and drop other codes.

The Reason's description of the swapped great vessels is the accepted anatomical definition of this defect, so it stands as true and as the actual cause of the Assertion. This removes the code where R does not explain A, and it removes the codes that mark either statement false.

### **Final Answer:**

Both statements are true, and the Reason is the correct explanation of

the Assertion, based on standard physiology since the printed key was unreadable.

**Quick Tip:** Picture two separate loops running side by side; only a shunt lets oxygenated blood cross over.

• • •

**55.** Calcium Channel Blockers are contraindicated in

- (A) Acute Left Ventricular Failure
- (B) Essential Hypertension
- (C) Peripheral Vascular Disease
- (D) Primary Pulmonary Hypertension

**Correct Answer:** (A) Acute Left Ventricular Failure

**SOLUTION:**

**Step 1:** Start from the drug's core action.

Calcium channel blockers work by blocking calcium entry into muscle cells, which relaxes blood vessel walls and, for some members of this drug group, also weakens the force with which the heart muscle squeezes.

**Step 2:** Match this action against acute left ventricular failure.

An acutely failing left ventricle is already unable to pump adequately. Adding a drug that cuts contraction strength even further removes the little reserve the heart has left, risking a sudden drop in cardiac output and blood pressure. This makes the drug class unsafe in this setting.

**Step 3:** Go through the remaining choices one by one.

Essential hypertension is actually one of the main reasons these drugs are prescribed, since they lower blood pressure by relaxing vessels. Peripheral vascular disease benefits from the vessel widening effect of dihydropyridine agents rather than being harmed by it. Primary pulmonary hypertension patients who show a positive response on vasodilator testing are treated with high dose calcium channel blockers as first line therapy, so this is not an absolute contraindication.

**Step 4: Settle on the answer.**

Only the acutely failing heart is truly put at risk by the negative effect on contraction, making acute left ventricular failure the correct contraindication.

**Quick Tip:** Think about what a drug that weakens heart contraction would do to an already failing heart.

• • •

**56.** Which one of the following is NOT the feature of Atrial fibrillation?

- (A) Varying intensity of First Heart sound
- (B) Pulse deficit
- (C) Disappearance of Presystolic accentuation of mid diastolic murmur
- (D) Prominent 'a' wave on JVP

**Correct Answer:** (D) Prominent 'a' wave on JVP

**SOLUTION:**

**Step 1: Fix the core problem in atrial fibrillation.**

The defining problem in this rhythm is that the atria lose their single

coordinated contraction and instead quiver chaotically. Every clinical sign that depends on a clean, timed atrial push should therefore disappear, while signs caused by irregular ventricular filling should appear.

**Step 2: Confirm the three genuine features.**

Varying first heart sound intensity comes from the changing gap between beats, which changes how far the mitral valve leaflets have drifted apart before they slam shut, so its loudness varies. Pulse deficit comes from weak, rapidly following beats that do not push enough blood to be felt at the wrist even though the heart sound is heard at the chest. Loss of presystolic accentuation in a mid diastolic murmur happens because that accentuation was created by the atrial kick, and atrial fibrillation removes that kick. All three follow directly from the loss of organised atrial activity.

**Step 3: Test the fourth statement against the same logic.**

A prominent 'a' wave needs the opposite of what atrial fibrillation causes, it needs a strong, coordinated atrial contraction pressing against a stiff or obstructed right ventricle. Since atrial fibrillation destroys coordinated atrial contraction, the 'a' wave cannot be prominent, in fact it is absent in this rhythm.

**Step 4: Conclude.**

The option describing a prominent 'a' wave is the one that goes against how atrial fibrillation actually behaves, so it is the correct answer to "NOT a feature."

**Quick Tip:** The 'a' wave on JVP needs an organised atrial contraction, which atrial fibrillation does not have.

57. Infective Endocarditis is a very rare feature of

- (A) Patent ductus arteriosus
- (B) Ostium secundum atrial septal defect
- (C) Tetralogy of Fallot
- (D) Ventricular septal defect

**Correct Answer:** (B) Ostium secundum atrial septal defect

**SOLUTION:**

**Step 1: What predisposes to endocarditis.**

Bacteria settle where the endocardium has been scraped up by a fast jet of blood. Any defect that creates a strong jet sets up a risk for infective endocarditis.

**Step 2: The special case of secundum ASD.**

An ostium secundum ASD is a wide hole between the two atria, and the pressure difference between the atria is small. A small pressure gap means slow, low velocity flow, not a jet.

**Step 3: Why that matters.**

Without a jet, the endocardial lining stays intact, so there is no rough surface for bacteria to colonize. This is why doctors do not even recommend endocarditis prophylaxis for an isolated secundum ASD.

**Step 4: Check the alternatives.**

A patent ductus keeps a constant high pressure jet flowing into the pulmonary artery, a VSD drives blood across a real pressure gap into the other ventricle, and Tetralogy of Fallot has both a big VSD and a right to left jet. All three damage the endocardium and are classic

endocarditis risks.

**Step 5: Conclude.**

The defect set apart from a jet lesion, and so rarely linked with infective endocarditis, is the ostium secundum atrial septal defect.

**Ostium secundum atrial septal defect**

**Quick Tip:** Think about which shunt has no real pressure gradient and so no jet lesion.

• • •

**58.**

Match List I (Clinical signs) with List II (Cardiac disease) and select the correct answer using the codes given below the lists.

| List I (Clinical signs)    | List II (Cardiac disease)      |
|----------------------------|--------------------------------|
| A. Hill's sign             | 1. Pericardial effusion        |
| B. Ewart's sign            | 2. Hypertrophic cardiomyopathy |
| C. Double systolic impulse | 3. Junctional rhythm           |
| D. Cannon waves            | 4. Aortic regurgitation        |

Codes:

- (A) A - 4, B - 2, C - 1, D - 3  
(B) A - 3, B - 1, C - 2, D - 4  
(C) A - 4, B - 1, C - 2, D - 3  
(D) A - 3, B - 2, C - 1, D - 4

**Correct Answer:** (C) A - 4, B - 1, C - 2, D - 3

## **SOLUTION:**

### **Step 1:** Start with the pulse pressure clue.

Hill's sign compares leg cuff pressure with arm cuff pressure. A gap of 20 mm Hg or more points to a wide pulse pressure state, and the classic cause is aortic regurgitation. So Hill's sign links to 4.

### **Step 2:** Move to the chest wall dullness.

Ewart's sign is dullness with bronchial breath sounds just under the tip of the left scapula. A big pericardial effusion pushes on the lung base and creates exactly this finding, so Ewart's sign links to 1.

### **Step 3:** Think about the double impulse.

When the ventricle wall is thick and stiff, as in hypertrophic cardiomyopathy, the atrial kick has to work hard to fill it, and this gives a palpable pre-systolic bump right before the main systolic beat. This double systolic impulse links to 2.

### **Step 4:** Think about cannon waves.

Cannon waves show up in the neck veins when the atrium and ventricle beat out of step, so the atrium squeezes against a shut tricuspid valve. A junctional rhythm is a common cause of this loss of coordination, so cannon waves link to 3.

### **Step 5:** Build the final code.

Combining all four pairs gives A-4, B-1, C-2, D-3, which is option (c).

**A-4, B-1, C-2, D-3**

**Quick Tip:** Match each sign to its mechanism: pressure gradient,

compression, hypertrophy, or timing mismatch.

• • •

**59.**

Match List I (Type of pulse) with List II (Cardiac pathology) and select the correct answer using the codes given below the lists.

| List I (Type of pulse) | List II (Cardiac pathology)          |
|------------------------|--------------------------------------|
| A. Pulsus parvus       | 1. Aortic stenosis                   |
| B. Bisferiens pulse    | 2. Cardiac tamponade                 |
| C. Pulsus alternans    | 3. Aortic stenosis and regurgitation |
| D. Pulsus paradoxus    | 4. Left ventricular failure          |

Codes:

- (A) A - 1, B - 4, C - 3, D - 2  
(B) A - 1, B - 3, C - 4, D - 2  
(C) A - 2, B - 4, C - 3, D - 1  
(D) A - 2, B - 3, C - 4, D - 1

**Correct Answer:** (B) A - 1, B - 3, C - 4, D - 2

**SOLUTION:**

**Step 1:** Take pulsus parvus first.

A narrow aortic valve limits how much blood the left ventricle can eject in one beat, so the pulse felt at the wrist feels small and weak. That is pulsus parvus, and it fits aortic stenosis.

**Step 2:** Look at the bisferiens shape.

Two peaks in one pulse wave happen when a stiff, narrowed valve

pushes blood out forcefully and some of that same blood then leaks back due to a leaky valve too. Having both stenosis and regurgitation together produces this twin peak pulse.

**Step 3: Consider alternating beats.**

When the heart muscle is weak, as in severe left ventricular failure, consecutive beats can vary in strength while the rhythm stays regular. This beat to beat swing is pulsus alternans.

**Step 4: Consider the paradox with breathing.**

In cardiac tamponade, fluid around the heart squeezes the chambers, and normal inspiration drops the systolic pressure by more than 10 mm Hg. This exaggerated fall is pulsus paradoxus.

**Step 5: Assemble the code.**

So pulsus parvus goes with aortic stenosis (1), bisferiens pulse with mixed aortic stenosis and regurgitation (3), pulsus alternans with left ventricular failure (4), and pulsus paradoxus with cardiac tamponade (2). This is option (b).

|                    |
|--------------------|
| A-1, B-3, C-4, D-2 |
|--------------------|

**Quick Tip:** Link each pulse shape to the event that shapes it: narrowing, mixed lesion, weak muscle, or tamponade.



**60.**

Consider the following statements. The features of severe asthma include:

1. Central cyanosis.
2. Disturbance of consciousness.
3. Pulsus paradoxus.
4. Heart rate less than 60 per minute.

Which of these statements are correct?

- (A) 2, 3 and 4
- (B) 1, 3 and 4
- (C) 1, 2 and 3
- (D) 1, 2 and 4

**Correct Answer:** (C) 1, 2 and 3

**SOLUTION:**

**Step 1: Set the picture of a bad asthma attack.**

In severe asthma the airways are so narrow that the patient works hard to breathe and oxygen levels drop.

**Step 2: Check cyanosis.**

Low oxygen shows as a bluish tinge on the lips and tongue, called central cyanosis. This is seen in severe attacks, so statement 1 holds.

**Step 3: Check the mind.**

When oxygen keeps falling and carbon dioxide builds up, the brain suffers first, and the patient can become drowsy or agitated. A change in consciousness is a red flag sign, so statement 2 holds.

**Step 4: Check the pulse pattern.**

Struggling to breathe creates large pressure swings inside the chest, and this drops the blood pressure more than usual with each breath in. This is pulsus paradoxus, a known feature of severe attacks, so statement 3 holds.

**Step 5: Check the heart rate.**

A severe attack speeds the heart up, it does not slow it down. A heart rate under 60 beats per minute would actually suggest the patient is close to respiratory arrest, not a standard feature of severity, so statement 4 fails.

**Step 6: Put it together.**

Only statements 1, 2 and 3 describe severe asthma correctly.

|            |
|------------|
| 1, 2 and 3 |
|------------|

**Quick Tip:** Severe asthma causes tachycardia and hypoxia signs, not a slow heart rate.

• • •

**61.** A patient presents with breathlessness. He has bilateral basal crepitations. Lung function tests reveal a decrease in total lung capacity (TLC) and vital capacity (VC), with a normal  $FEV_1/VC$  ratio. The most likely diagnosis is

- (A) Chronic bronchitis
- (B) Idiopathic pulmonary fibrosis
- (C) Cystic fibrosis
- (D) Allergic bronchopulmonary aspergillosis

**Correct Answer:** (B) Idiopathic pulmonary fibrosis

**SOLUTION:**

**Step 1:** Separate the two big categories of lung disease.

Obstructive disease narrows the airway, so air comes out slowly and  $FEV_1/VC$  drops. Restrictive disease stiffens or shrinks the lung itself, so both  $TLC$  and  $VC$  fall but the ratio of  $FEV_1$  to  $VC$  stays normal, since whatever air is inside still leaves at a normal rate.

**Step 2:** Read the numbers given.

The question gives a fall in  $TLC$  and  $VC$  together with a normal  $FEV_1/VC$  ratio. That is the signature of a restrictive problem.

**Step 3:** Add in the exam finding.

Bilateral basal crepitations point to fibrous scarring at the lung bases, which is exactly what happens in idiopathic pulmonary fibrosis. The scar tissue makes the lung stiff and small, matching the restrictive numbers.

**Step 4:** Eliminate the obstructive options.

Chronic bronchitis, cystic fibrosis, and allergic bronchopulmonary aspergillosis all narrow the airways and would drop the  $FEV_1/VC$  ratio, which does not match the normal ratio given here.

**Step 5:** Conclude.

The diagnosis that fits a restrictive pattern with basal crepitations is idiopathic pulmonary fibrosis.

|                               |
|-------------------------------|
| Idiopathic pulmonary fibrosis |
|-------------------------------|

**Quick Tip:** A fall in TLC and VC with a normal FEV<sub>1</sub>/VC ratio means restrictive, not obstructive, lung disease.

• • •

**62.** An otherwise healthy young man presented with sudden onset of breathlessness which was increasing rapidly. On examination, it was found that the left chest movement was grossly restricted, breath sounds were absent, and the percussion note was tympanitic. The most likely diagnosis is

- (A) Tension pneumothorax
- (B) Simple pneumothorax
- (C) Bronchial asthma
- (D) Cardiac asthma

**Correct Answer:** (A) Tension pneumothorax

**SOLUTION:**

**Step 1:** List what the exam tells us.

A young healthy man suddenly cannot breathe, and it is getting worse fast. One side of his chest barely moves, has no breath sounds, and sounds hollow, like a drum, when tapped.

**Step 2:** Work out what a hollow, drum-like note means.

A tympanitic note over the chest means air has collected where lung tissue should be, pushing the lung away from the chest wall. This is a pneumothorax.

**Step 3:** Decide why it is getting worse so fast.

A simple pneumothorax lets in a fixed amount of air and usually stays

fairly stable. Here the breathlessness is climbing quickly, which fits a one-way air leak: air gets pumped into the pleural space on every breath in but cannot escape on breathing out. Pressure keeps rising, squashing the lung harder and shifting the mediastinum, and this rapid, escalating picture is the hallmark of tension pneumothorax.

**Step 4: Rule out the medical causes.**

Bronchial asthma gives wheeze and prolonged expiration over both lungs, not one silent hollow-sounding side. Cardiac asthma comes from heart failure with crackles and wheeze, again bilateral, not a single collapsed, air-filled hemithorax.

**Step 5: Conclude.**

The presentation matches tension pneumothorax.

**Tension pneumothorax**

**Quick Tip:** Rapidly worsening breathlessness with a silent, tympanitic hemithorax points to a building pressure, not just trapped air.

• • •

**63.** Which one of the following is NOT correct regarding Silicosis?

- (A) Egg shell calcification is seen on chest X-ray
- (B) It is more marked in the lower zone
- (C) May lead to progressive massive fibrosis
- (D) The disease may progress even after the exposure has ceased

**Correct Answer:** (B) It is more marked in the lower zone

**SOLUTION:**

**Step 1: Picture what silica dust does to the lung.**

Breathing in tiny silica particles over years sets off scarring, mainly near the small airways and the lymph nodes at the lung hilum.

**Step 2: Check the X-ray sign first.**

The scarred hilar nodes can calcify only at their rim, leaving a thin ring of calcium that looks like an egg shell on the film. This is a genuine and classic finding, so it is correct.

**Step 3: Check where the disease is worst.**

Because of how the lung clears dust and drains lymph, silica settles more in the upper parts of the lung. Silicosis is an upper zone disease, so calling it more marked in the lower zone reverses the real pattern. This statement is wrong.

**Step 4: Check the merging of nodules.**

Small silicotic nodules can grow and fuse into big conglomerate lumps, called progressive massive fibrosis. This is a known and correct complication.

**Step 5: Check what happens after the worker leaves the job.**

Silica stays trapped in the lung and keeps irritating it, so scarring can advance even years after exposure stops. This statement is also correct.

**Step 6: Pick the false one.**

The only wrong claim is the zone, since silicosis favors the upper zone, not the lower zone.

**It is more marked in the lower zone**

**Quick Tip:** Silicosis is an upper zone disease; find the one statement that gets this backwards.

• • •

**64.** Which one of the following organisms causes pneumonia which most commonly results in Pneumatocele?

- (A) *Klebsiella pneumoniae*
- (B) *Haemophilus influenzae*
- (C) *Staphylococcus aureus*
- (D) *Streptococcus pneumoniae*

**Correct Answer:** (C) *Staphylococcus aureus*

**SOLUTION:**

**Step 1:** Define the lesion in question.

A pneumatocele is a thin, balloon-like air pocket inside the lung that forms after the small airways get damaged during pneumonia, trapping air like a one-way valve.

**Step 2:** Match this to the right bug.

*Staphylococcus aureus* is notorious for tearing up lung tissue badly, causing necrosis and abscesses, particularly in babies and small children. That same destructive process on the tiny airways is what leaves behind pneumatoceles, which is why staph pneumonia is the textbook cause of this finding.

**Step 3:** Go through the other choices.

*Klebsiella* can cause a severe necrotizing pneumonia and abscesses too, but it is not the organism classically tied to pneumatoceles.

Haemophilus influenzae usually gives bronchopneumonia in children without this cystic complication. Streptococcus pneumoniae is the commonest cause of pneumonia in general but rarely leaves behind an air-filled cyst.

**Step 4:** Settle on the answer.

The organism most tied to pneumatocele formation is Staphylococcus aureus.

Staphylococcus aureus

**Quick Tip:** Think of the organism famous for necrotizing pneumonia and lung abscess in infants.

• • •

**65.** Match List I (Respiratory sign) with List II (Clinical condition) and select the correct answer using the codes given below the Lists:

List I (Respiratory sign)

- A. Localized wheeze
- B. Shifting dullness
- C. Ellis curve
- D. Intercostal tenderness

List II (Clinical condition)

- 1. Pleural effusion
- 2. Empyema
- 3. Hydropneumothorax
- 4. Bronchial tumour

- (A) A-2, B-1, C-3, D-4
- (B) A-4, B-3, C-1, D-2
- (C) A-2, B-3, C-1, D-4
- (D) A-4, B-1, C-3, D-2

**Correct Answer:** (B) A-4, B-3, C-1, D-2

**SOLUTION:**

This question tests the classical clinical association of four chest examination signs.

1. **Localized wheeze:** A wheeze confined to one area suggests a local airway narrowing, classically from a bronchial tumour.
2. **Shifting dullness:** A dullness level on percussion that shifts with position change happens when air and fluid coexist in the pleural space, as in hydropneumothorax.
3. **Ellis curve:** This curved line of dullness, higher in the axilla, is the classic sign of a pleural effusion.
4. **Intercostal tenderness:** Tenderness over the intercostal spaces from underlying pus points to an empyema.

Putting these together gives A-4, B-3, C-1, D-2.

Let's summarize:

- Each chest sign here has one specific classical disease association.
- Localized wheeze-tumour, shifting dullness-hydropneumothorax, Ellis curve-effusion, intercostal tenderness-empyema.

So the correct match is A-4, B-3, C-1, D-2.

**Quick Tip:** Match each classical chest sign to its single best known clinical association.

• • •

**66.** Which of the following is the primary site of production of Gastrin?

- (A) Pylorus
- (B) Antrum
- (C) Pancreas
- (D) Small intestine

**Correct Answer:** (B) Antrum

**SOLUTION:**

This question asks which gut region mainly produces the hormone gastrin.

1. **Pylorus:** This is the muscular outlet valve of the stomach, not the main site of gastrin producing cells.
2. **Antrum:** The G cells of the gastric antrum are the main producers of gastrin, releasing it in response to distension and vagal stimulation to drive acid secretion.
3. **Pancreas:** This organ makes insulin and glucagon, not gastrin, as its primary hormones.
4. **Small intestine:** This region makes other gut hormones like secretin and cholecystokinin, with only minor gastrin contribution compared to the antrum.

The antrum, home to the G cells, is the correct site of primary gastrin production.

Let's summarize:

- Gastrin is made by G cells concentrated in the gastric antrum.
- This gastrin then stimulates acid secretion from parietal cells elsewhere in the stomach.

So the primary site of gastrin production is the antrum.

**Quick Tip:** Think of the G cells located in the lower stomach lining.

• • •

**67.** Chronic Active Hepatitis is most reliably distinguished from Chronic Persistent Hepatitis by the presence of

- (A) Extrahepatic manifestation
- (B) Significant titre of antismooth muscle antibody
- (C) Characteristic liver histology
- (D) Hepatitis B surface antigen

**Correct Answer:** (C) Characteristic liver histology

**SOLUTION:**

This question is about the most dependable way to separate two older categories of chronic hepatitis.

1. **Extrahepatic manifestation:** These can occur in various chronic liver diseases and are not specific or consistent enough to reliably separate the two forms.
2. **Significant titre of antismooth muscle antibody:** This marker is more linked to autoimmune hepatitis specifically, not a general distinguishing feature between active and persistent hepatitis of any cause.

3. **Characteristic liver histology:** Chronic active hepatitis shows piecemeal necrosis extending into the liver lobule with a tendency to progress to cirrhosis, while chronic persistent hepatitis shows milder, portal-confined inflammation with a benign course. This histological difference is the most reliable distinguishing feature.
4. **Hepatitis B surface antigen:** This only reflects ongoing viral infection and can appear in either pattern of chronic hepatitis, so it does not distinguish between them.

Only the underlying liver histology reliably separates these two forms of chronic hepatitis.

Let's summarize:

- Chronic active hepatitis shows destructive, lobule-extending inflammation, while chronic persistent hepatitis stays confined to the portal tracts.
- This histological pattern, not antibodies or viral markers, is what reliably tells them apart.

So the distinguishing feature is characteristic liver histology.

**Quick Tip:** Think about what the two conditions actually look like under the microscope.



**68.** Commonest early symptom of primary biliary cirrhosis is

- (A) Pruritus
- (B) Jaundice
- (C) Hepatomegaly
- (D) Pale stools

**Correct Answer:** (A) Pruritus

**SOLUTION:**

This question asks which symptom of primary biliary cirrhosis typically shows up first.

1. **Pruritus:** Retained bile acids build up in the skin early in the disease, causing itching that classically precedes jaundice and other symptoms by months to years, making it the most common early symptom.
2. **Jaundice:** This usually develops later, once bile duct destruction has progressed enough to impair bilirubin excretion significantly.
3. **Hepatomegaly:** This is a physical examination finding that appears as the disease advances, not typically the presenting early symptom.
4. **Pale stools:** These result from reduced bile reaching the gut and tend to appear with more advanced cholestasis, later in the disease course.

Since bile salt build up in the skin happens early, well before jaundice, pruritus is the earliest and commonest presenting symptom.

Let's summarize:

- Primary biliary cirrhosis progresses slowly, with bile salts accumulating in the skin before major liver dysfunction appears.
- This makes pruritus the classic earliest symptom, ahead of jaundice, hepatomegaly, or pale stools.

So the commonest early symptom is pruritus.

**Quick Tip:** Think about the skin symptom caused by early build up of bile salts, before jaundice appears.

• • •

**69.** Which one of the following is NOT used as a criteria in the Child-Pugh classification of liver disease to identify the risk categories?

- (A) Serum albumin
- (B) SGOT, SGPT ratio
- (C) Ascites
- (D) Prothrombin

**Correct Answer:** (B) SGOT, SGPT ratio

**SOLUTION:**

This question asks which of the four listed parameters is not actually part of the Child-Pugh classification.

1. **Serum albumin:** This is one of the five official Child-Pugh components, reflecting liver synthetic function.
2. **SGOT, SGPT ratio:** This AST/ALT ratio is used elsewhere to suggest specific causes of liver disease but is not one of the five parameters scored in the Child-Pugh classification.
3. **Ascites:** This is one of the five official components, reflecting portal hypertension and fluid retention.
4. **Prothrombin:** Prothrombin time is one of the five official components, reflecting clotting factor synthesis.

The Child-Pugh score is built from bilirubin, albumin, prothrombin time, ascites, and encephalopathy, so the SGOT/SGPT ratio is the parameter that does not belong.

Let's summarize:

- The Child-Pugh classification has five fixed components: bilirubin, albumin, prothrombin time, ascites, and encephalopathy.
- The SGOT/SGPT ratio is not one of them.

So the parameter NOT used is the SGOT, SGPT ratio.

**Quick Tip:** Recall the fixed five components of the Child-Pugh score: bilirubin, albumin, prothrombin time, ascites, and encephalopathy.

...

**70.** Consider the following statements: Cystic fibrosis of the pancreas

1. Is an autosomal dominant disorder.
2. Is established by sweat sodium concentrations more than 80 mmol/L.
3. May produce neonatal small bowel obstruction.
4. Is associated with a dysfunction of all mucus secreting glands.

Which of these statements are correct?

- (A) 2, 3 and 4  
(B) 1, 3 and 4  
(C) 1, 2 and 3  
(D) 1, 2 and 4

**Correct Answer:** (A) 2, 3 and 4

**SOLUTION:**

This question checks four statements about cystic fibrosis of the pancreas, and we need to find which combination is true.

1. **Autosomal dominant disorder:** This is false, since cystic fibrosis is actually autosomal recessive, requiring two defective CFTR gene copies.
2. **Sweat sodium more than 80 mmol/L:** This is true, since an elevated sweat chloride/sodium test is the classic diagnostic test for this condition.
3. **Neonatal small bowel obstruction:** This is true, since thick meconium can cause meconium ileus in newborns with cystic fibrosis.
4. **Dysfunction of all mucus secreting glands:** This is true, since the CFTR defect disrupts chloride transport across essentially all exocrine mucus glands in the body.

Since only the inheritance pattern statement is false, the correct combination is statements 2, 3, and 4.

Let's summarize:

- Cystic fibrosis is autosomal recessive, not dominant.
- Its sweat test, bowel obstruction risk, and widespread mucus gland dysfunction are all true features.

So the correct statements are 2, 3 and 4.

**Quick Tip:** Remember cystic fibrosis is autosomal recessive, not dominant, even though its other features here are all true.

• • •

71. The persons working in dye industry are prone to develop malignancy of

- (A) Kidney
- (B) Urinary bladder
- (C) Prostate
- (D) Lung

**Correct Answer:** (B) Urinary bladder

**SOLUTION:**

This question asks which organ's cancer risk rises specifically in dye industry workers.

1. **Kidney:** The relevant dye industry carcinogens act mainly on the bladder lining during urinary excretion, not primarily on kidney tissue.
2. **Urinary bladder:** Aromatic amines like benzidine, used in dye manufacturing, are excreted in urine and repeatedly irritate the bladder lining, making bladder cancer the classic occupational malignancy in this industry.
3. **Prostate:** There is no well established specific occupational link between dye exposure and prostate cancer.
4. **Lung:** Lung cancer is more classically tied to exposures like asbestos, not to dye industry aromatic amines.

Since the carcinogenic aromatic amines concentrate in urine and act on the bladder lining, urinary bladder cancer is the well known occupational risk for dye industry workers.

Let's summarize:

- Dye industry chemicals like aromatic amines are excreted through urine.

- This exposes the bladder lining repeatedly, making bladder cancer the classic occupational malignancy here.

So the malignancy dye industry workers are prone to is of the urinary bladder.

**Quick Tip:** Think about which organ's lining is repeatedly exposed to aromatic amine carcinogens as they are excreted in urine.

• • •

**72.** Which one of the following is NOT true regarding Pseudobulbar palsy?

- (A) Emotional incontinence
- (B) Exaggerated jaw jerk
- (C) Dysarthria
- (D) Flaccid tongue

**Correct Answer:** (D) Flaccid tongue

**SOLUTION:**

This question asks which listed feature does not actually belong to pseudobulbar palsy, an upper motor neuron disorder of the lower cranial nerves.

1. **Emotional incontinence:** This uncontrollable crying or laughing is a true, well recognized feature caused by loss of cortical control over emotional expression.
2. **Exaggerated jaw jerk:** This brisk reflex is a true upper motor neuron sign, since bilateral corticobulbar damage releases the reflex from cortical inhibition.

3. **Dysarthria:** This slurred speech is a true feature, caused by spastic weakness of the tongue, lips, and palate.
4. **Flaccid tongue:** This is actually a lower motor neuron sign belonging to true bulbar palsy. Since pseudobulbar palsy spares the lower motor neuron and only affects its upper motor neuron input, the tongue should be spastic, not flaccid, making this statement false.

Since pseudobulbar palsy is defined by upper motor neuron damage, a flaccid tongue does not fit and is the feature that is NOT true.

*Note: the source paper's printed answer key marks option (b), exaggerated jaw jerk, as the exception, but jaw jerk exaggeration is a well established true upper motor neuron sign of pseudobulbar palsy, while tongue flaccidity is the lower motor neuron finding that does not belong. This solution follows the medically correct answer.*

Let's summarize:

- Pseudobulbar palsy is caused by bilateral upper motor neuron damage, so its signs are all spastic/upper motor neuron in nature.
- A flaccid tongue is a lower motor neuron finding and does not belong to this picture.

So the feature that is NOT true of pseudobulbar palsy is a flaccid tongue.

**Quick Tip:** Pseudobulbar palsy is an upper motor neuron disorder, so its tongue should be spastic, not flaccid.

• • •

**73.** Hypokalemia is caused by the following EXCEPT

- (A) Cushing's syndrome
- (B) Conn's syndrome
- (C) Bartter's syndrome
- (D) Addison's disease

**Correct Answer:** (D) Addison's disease

**SOLUTION:**

This question asks which of four conditions is the exception that does not cause hypokalemia.

1. **Cushing's syndrome:** Very high cortisol levels act like excess mineralocorticoid on the kidney, increasing potassium loss and causing hypokalemia.
2. **Conn's syndrome:** Excess aldosterone in this condition directly drives potassium excretion, making hypokalemia a hallmark feature.
3. **Bartter's syndrome:** This tubular defect causes salt wasting and secondary hyperaldosteronism, leading to significant hypokalemia.
4. **Addison's disease:** This is caused by aldosterone deficiency, not excess, so the kidney retains potassium instead of excreting it, causing hyperkalemia rather than hypokalemia.

Since Addison's disease works through hormone deficiency rather than excess, it produces the opposite electrolyte change and is the correct exception.

Let's summarize:

- Cushing's, Conn's, and Bartter's syndromes all increase potassium loss through excess mineralocorticoid effect.

- Addison's disease has too little aldosterone, causing hyperkalemia instead.

So the exception is Addison's disease.

**Quick Tip:** Three of these have too much mineralocorticoid effect; one has too little.

• • •

**74.** Sensory Neural Deafness associated with hereditary nephritis is seen in

- (A) Fanconi's syndrome
- (B) Berger's disease
- (C) Albright's syndrome
- (D) Alport's syndrome

**Correct Answer:** (D) Alport's syndrome

**SOLUTION:**

This question asks which condition classically combines hereditary kidney disease with sensorineural hearing loss.

1. **Fanconi's syndrome:** This causes a proximal renal tubular reabsorption defect but has no classical link to deafness.
2. **Berger's disease:** This IgA nephropathy causes recurrent hematuria but is not associated with hearing loss.
3. **Albright's syndrome:** This affects bone and endocrine tissues and has no connection to hereditary nephritis with deafness.
4. **Alport's syndrome:** A defect in type IV collagen, present in both the kidney's glomerular basement membrane and the inner

ear, causes this syndrome's classic combination of progressive hereditary nephritis and sensorineural deafness.

Because type IV collagen is shared between the kidney's filtering membrane and inner ear structures, only Alport's syndrome produces this exact combination.

Let's summarize:

- Type IV collagen is a component of both the glomerular basement membrane and the inner ear.
- A defect in this collagen in Alport's syndrome damages both organs, causing hereditary nephritis with deafness.

So this presentation is seen in Alport's syndrome.

**Quick Tip:** Think of the type IV collagen defect that damages both the kidney's filtering membrane and the inner ear.

• • •

**75.** Metabolic acidosis with increased anion gap occurs in all of the following EXCEPT

- (A) Diabetic keto acidosis
- (B) Lactic acidosis
- (C) Renal tubular acidosis
- (D) Methanol poisoning

**Correct Answer:** (C) Renal tubular acidosis

**SOLUTION:**

This question asks which of four causes of metabolic acidosis is the exception that does not raise the anion gap.

1. **Diabetic keto acidosis:** Accumulating ketone bodies are unmeasured anions that raise the anion gap.
2. **Lactic acidosis:** Lactate itself is an unmeasured anion, so it raises the anion gap as it accumulates.
3. **Renal tubular acidosis:** Here bicarbonate is lost directly through the kidney and replaced by chloride, so the anion gap stays normal even though the patient is acidotic. This is the classic normal anion gap, hyperchloremic type of metabolic acidosis.
4. **Methanol poisoning:** Methanol is converted to formic acid, whose unmeasured anion raises the anion gap.

Since renal tubular acidosis replaces lost bicarbonate with chloride rather than an unmeasured anion, it is the exception that keeps the anion gap normal.

Let's summarize:

- DKA, lactic acidosis, and methanol poisoning all add an unmeasured acid anion, raising the anion gap.
- Renal tubular acidosis instead loses bicarbonate and gains chloride, keeping the anion gap normal.

So the exception is renal tubular acidosis.

**Quick Tip:** Look for the cause where bicarbonate loss is replaced by chloride rather than by an unmeasured acid anion.



**76.** The following conditions may present with both upper and lower motor neuron involvement EXCEPT

- (A) Subacute combined degeneration of spinal cord
- (B) Friedreich's ataxia
- (C) Amyotrophic lateral sclerosis
- (D) Becker's Dystrophy

**Correct Answer:** (D) Becker's Dystrophy

**SOLUTION:**

This question asks which of four conditions is the exception that does not show both upper and lower motor neuron signs together.

1. **Subacute combined degeneration of spinal cord:** Vitamin B12 deficiency here damages both the corticospinal tracts and peripheral nerves, giving a true combined picture.
2. **Friedreich's ataxia:** This damages the corticospinal tracts along with the dorsal root ganglia, producing extensor plantars together with absent reflexes.
3. **Amyotrophic lateral sclerosis:** This disease directly destroys both upper and lower motor neurons simultaneously, making combined signs its hallmark feature.
4. **Becker's Dystrophy:** This is a primary muscle fiber disease from partly functioning dystrophin, with no damage to the motor neurons or corticospinal tracts, so it shows pure muscle-type weakness without true upper motor neuron signs.

Since Becker's Dystrophy is purely a muscle disease rather than a nervous system disease, it is the exception here.

Let's summarize:

- SCD, Friedreich's ataxia, and ALS all damage both upper and lower motor neuron pathways.
- Becker's Dystrophy is a pure muscle disease and does not involve the motor neurons at all.

So the exception is Becker's Dystrophy.

**Quick Tip:** Three of these damage the nervous system itself; one is a disease of muscle fiber alone.

• • •

77. The characteristic feature of Horner's syndrome is

- (A) Dilated pupil
- (B) Ptosis
- (C) Increased sweating
- (D) Abducted eye

**Correct Answer:** (B) Ptosis

**SOLUTION:**

This question asks for the classic feature of Horner's syndrome, caused by loss of sympathetic supply to the eye and face.

1. **Dilated pupil:** Loss of sympathetic tone actually causes a constricted pupil (miosis), not dilation.
2. **Ptosis:** Loss of sympathetic input to Muller's muscle, which normally gives extra lift to the eyelid, causes this classic partial eyelid droop.
3. **Increased sweating:** Sympathetic loss actually reduces sweating (anhidrosis) on the affected side, not increases it.

4. **Abducted eye:** Horner's syndrome does not affect the muscles controlling eye position, so there is no abnormal eye deviation.

Since Horner's syndrome results from loss, not excess, of sympathetic tone, ptosis (along with miosis and anhidrosis) is its characteristic feature.

Let's summarize:

- Horner's syndrome is caused by loss of sympathetic supply to the eye and face.
- This produces ptosis, miosis, and anhidrosis, not dilation or increased sweating.

So the characteristic feature is ptosis.

**Quick Tip:** Horner's syndrome is a loss of sympathetic tone, so its features are the opposite of pupil dilation and increased sweating.

• • •

**78.** Which one of the following conditions is NOT true regarding Myotonic dystrophy?

- (A) Cardiac defects
- (B) Cataract
- (C) Frontal baldness
- (D) Enlarged testis

**Correct Answer:** (D) Enlarged testis

**SOLUTION:**

This question asks which feature does not actually belong to myotonic dystrophy, a multisystem genetic disease.

1. **Cardiac defects:** Conduction abnormalities and arrhythmias are a well recognized true feature of this disease.
2. **Cataract:** An early-onset posterior subcapsular cataract is a classic true feature.
3. **Frontal baldness:** An early, distinctive pattern of frontal hair loss is a true and classic feature, especially in men.
4. **Enlarged testis:** Myotonic dystrophy actually causes testicular atrophy, not enlargement, making this statement false.

Since testicular atrophy, not enlargement, is the true feature of myotonic dystrophy, enlarged testis is the one that does not belong.

Let's summarize:

- Cardiac conduction defects, cataracts, and frontal baldness are all true features of myotonic dystrophy.
- The disease causes testicular atrophy, not enlargement.

So the feature that is NOT true is enlarged testis.

**Quick Tip:** Myotonic dystrophy causes gonadal atrophy, not enlargement.

• • •

79. Homonymous hemianopia may occur due to lesion involving

- (A) Optic nerve
- (B) Optic chiasm
- (C) Optic tract
- (D) Bilateral foveal lesions

**Correct Answer:** (C) Optic tract

**SOLUTION:**

This question asks which point along the visual pathway, when damaged, causes a homonymous hemianopia, the same-side field loss in both eyes.

1. **Optic nerve:** A lesion here, before the chiasm, affects only that one eye's vision, not a matching field defect in both eyes.
2. **Optic chiasm:** This is where nasal retinal fibers cross, so damage here classically causes bitemporal hemianopia, not homonymous hemianopia.
3. **Optic tract:** Just behind the chiasm, fibers from corresponding halves of both eyes have already regrouped together, so a lesion here classically produces homonymous hemianopia.
4. **Bilateral foveal lesions:** These affect central vision in both eyes rather than causing a one-sided field defect.

Based on the standard organization of the visual pathway, the optic tract is the site whose damage produces a homonymous hemianopia.

*Note: the source paper's printed answer key marks the optic chiasm as correct, but the chiasm is where fibers cross to classically cause bitemporal hemianopia; the optic tract, just behind the chiasm, is the site that produces homonymous hemianopia by standard neuroanatomy. This solution follows the medically correct answer and flags the discrepancy for review.*

Let's summarize:

- Optic nerve lesions affect one eye only; chiasm lesions cause bitemporal loss.
- Optic tract lesions, where matching fibers from both eyes have already regrouped, cause homonymous hemianopia.

So a lesion of the optic tract produces homonymous hemianopia.

**Quick Tip:** Fibers from matching halves of both eyes are already grouped together just behind the chiasm.

• • •

**80.** Uncontrolled action of which of the following enzymes plays a major etiological role in chronic myeloid leukemia?

- (A) Tyrosine kinase
- (B) Cholinesterase
- (C) Galactokinase
- (D) Bradykinin

**Correct Answer:** (A) Tyrosine kinase

**SOLUTION:**

This question asks which enzyme's uncontrolled activity causes chronic myeloid leukemia.

1. **Tyrosine kinase:** The Philadelphia chromosome fuses the BCR and ABL genes, producing a permanently active BCR-ABL tyrosine kinase that continuously drives abnormal myeloid cell proliferation.

2. **Cholinesterase:** This enzyme breaks down acetylcholine at synapses and has no role in leukemia development.
3. **Galactokinase:** This enzyme is involved in galactose metabolism, and its deficiency causes galactosemia, unrelated to leukemia.
4. **Bradykinin:** This is a peptide involved in inflammation, not an enzyme, and has no role in causing this disease.

The BCR-ABL fusion protein's constitutively active tyrosine kinase activity is the well established driver of chronic myeloid leukemia.

Let's summarize:

- The Philadelphia chromosome creates the BCR-ABL fusion gene.
- Its product is a permanently active tyrosine kinase that drives uncontrolled myeloid cell growth.

So the enzyme responsible is tyrosine kinase.

**Quick Tip:** Think of the BCR-ABL fusion protein created by the Philadelphia chromosome.

• • •

**81.** Which of the following blood group antigens serves as receptor for *Plasmodium vivax*?

- (A) Duffy
- (B) ABO
- (C) Kell
- (D) Rh

**Correct Answer:** (A) Duffy

### SOLUTION:

This question checks which surface marker on the red blood cell membrane the malaria parasite *Plasmodium vivax* latches onto before entering the cell.

1. **Duffy:** This antigen, part of the Duffy antigen receptor for chemokines, acts as the attachment point *P. vivax* needs to invade a red cell. Without it, the merozoite cannot get in.
2. **ABO:** This system matters for transfusion matching, not for *vivax* invasion.
3. **Kell:** Used mainly in transfusion and antenatal antibody screening, it plays no part here.
4. **Rh:** Important for Rh disease of the newborn and transfusions, but not for this parasite's entry.

People who are Duffy negative, a trait seen widely in West Africa, resist *vivax* infection since the parasite has nothing to bind to.

Let's summarize:

- The Duffy antigen is the red cell receptor that *P. vivax* needs for invasion.
- Duffy negative individuals are naturally protected from this species of malaria.

So the correct answer is Duffy.

**Quick Tip:** Duffy negative red cells resist *P. vivax* invasion.



**82.** Consider the following statements about Factor VIII (AHF), which is involved in the coagulation mechanism of haemostasis:

1. Only in extrinsic pathway
2. Only in intrinsic pathway
3. In common pathway

Which of these statements is/are correct?

- (A) 1 only
- (B) 2 only
- (C) 1 and 3
- (D) 2 and 3

**Correct Answer:** (B) 2 only

**SOLUTION:**

This question tests where Factor VIII, the antihemophilic factor, fits inside the coagulation cascade.

1. **1 only (extrinsic pathway):** Wrong, because the extrinsic pathway runs on tissue factor and factor VII, not factor VIII.
2. **2 only (intrinsic pathway):** Correct. Factor VIII teams up with activated factor IX to form the tenase complex, which then switches on factor X. This job belongs to the intrinsic pathway.
3. **1 and 3:** Wrong on both counts since factor VIII plays no direct part in the extrinsic or common pathway.
4. **2 and 3:** Half right, half wrong. Factor VIII does belong to the intrinsic pathway, but it is not classed as a common pathway factor, since the common pathway begins only after factor X is switched on.

The clinical proof of this grouping is Hemophilia A, where a missing factor VIII prolongs the activated partial thromboplastin time (an intrinsic pathway test) while the prothrombin time (an extrinsic pathway test) stays normal.

Let's summarize:

- Factor VIII pairs with factor IX to activate factor X, a job that belongs to the intrinsic pathway.
- It plays no role in the extrinsic pathway and is not itself labeled a common pathway factor.

So statement 2 alone is correct.

**Quick Tip:** Factor VIII pairs with factor IX in the intrinsic pathway.

• • •

**83.** Which of the following is not associated with hyperkalemia?

- (A) Tall T waves
- (B) Prolonged QRS interval
- (C) Short P.R. interval
- (D) Sine waves

**Correct Answer:** (C) Short P.R. interval

**SOLUTION:**

This question asks which ECG change does not belong to the usual list seen with a raised potassium level.

1. **Tall T waves:** This is the earliest and most classic hyperkalemia change, caused by faster repolarization of the ventricles.

2. **Prolonged QRS interval:** As potassium keeps rising, conduction through the ventricles slows, widening the QRS complex.
3. **Short P.R. interval:** Wrong direction. High potassium slows conduction through the atria and AV node, which stretches the PR interval, it does not shorten it.
4. **Sine waves:** In severe, life threatening hyperkalemia, the wide QRS blends into the T wave, giving a smooth sine wave shape on the strip.

Since three of the four choices are genuine hyperkalemia findings, the odd one out is the short PR interval, because the real effect of high potassium is to prolong, not shorten, that interval.

Let's summarize:

- Hyperkalemia gives tall T waves, then a wide QRS, then a sine wave pattern as it worsens.
- The PR interval gets longer with hyperkalemia, never shorter.

So a short PR interval is the feature that is not associated with hyperkalemia.

**Quick Tip:** Hyperkalemia prolongs the PR interval, it never shortens it.

...

**84.** Consider the following statements: In nephrogenic diabetes insipidus, the patient is likely to have

1. High vasopressin level.
2. Poor or no response to desmopressin.
3. Low plasma osmolality.
4. Elevated plasma glucose level.

Which of these statements are correct?

- (A) 1, 2 and 3  
(B) 2, 3 and 4  
(C) 1 and 4  
(D) 1, 2, 3 and 4

**Correct Answer:** (A) 1, 2 and 3

**SOLUTION:**

Nephrogenic diabetes insipidus (NDI) means the collecting ducts of the kidney do not answer the call of vasopressin, even though the hormone is present in normal or high amounts.

1. **High vasopressin level:** True. Since the kidney cannot concentrate urine, the body keeps losing water, the plasma gets slightly more concentrated, and this pushes the pituitary to release more vasopressin. So plasma vasopressin runs high in NDI, unlike central DI where it runs low.
2. **Poor or no response to desmopressin:** True, and this is the classic test used at the bedside. Give desmopressin: central DI patients concentrate their urine because they were simply short of hormone, while NDI patients show little change because their kidney tubules cannot respond regardless of how much hormone is supplied.

3. **Low plasma osmolality:** This does not match NDI as literally worded. The real finding is low urine osmolality (dilute urine), while plasma osmolality tends to run high, not low, because the patient keeps losing free water. This looks like a transcription error in the original statement, most likely meant to say urine osmolality.

4. **Elevated plasma glucose level:** False. This belongs to diabetes mellitus, an unrelated disease that only shares part of its name with diabetes insipidus.

Only statements 1 and 2 hold up cleanly as true features of NDI. None of the four listed option combinations gives exactly 1 and 2 only.

Between the two options containing both 1 and 2, '1, 2 and 3' is the better fit, since statement 3 is at least arguably true under a charitable reading, unlike statement 4 in the other option, which is clearly false.

Let's summarize:

- High vasopressin level and poor response to desmopressin are the two solid, textbook features of nephrogenic DI.
- The statement about low plasma osmolality is most likely a wording slip for low urine osmolality, and elevated glucose has nothing to do with this condition.

Because none of the given combinations correctly isolates just statements 1 and 2, '1, 2 and 3' is taken as the best available answer among the flawed options.

**Quick Tip:** NDI raises vasopressin but the kidney tubules will not respond to it.



**85.** Lymphogranuloma venereum is best treated by

- (A) Doxycycline
- (B) Erythromycin
- (C) Azithromycin
- (D) Ciprofloxacin

**Correct Answer:** (C) Azithromycin

**SOLUTION:**

Lymphogranuloma venereum (LGV) is a sexually transmitted disease caused by particular serotypes of *Chlamydia trachomatis*, and this question asks which drug treats it best.

1. **Doxycycline:** This is the classic, most commonly quoted first line drug for LGV, usually given for about three weeks to clear the infection from lymph tissue.
2. **Erythromycin:** Kept mainly as a substitute for pregnant patients or those who cannot take doxycycline, not the usual first choice.
3. **Azithromycin:** Works well against *Chlamydia trachomatis* and is accepted as an effective option for LGV in several guidelines, usually as a weekly dose over three weeks. This paper's answer key marks this as correct.
4. **Ciprofloxacin:** A fluoroquinolone aimed at organisms like *Neisseria gonorrhoeae*, not the standard drug for a chlamydial disease such as LGV.

Most textbooks lead with doxycycline as the drug of choice for LGV, but azithromycin is a recognized and effective alternative against the same organism, and it is the option this compiled key selects.

Let's summarize:

- Doxycycline is the classic first line drug for LGV in most references.
- Azithromycin is an accepted alternative against Chlamydia trachomatis and is the answer marked in this source.

So, per this paper's key, azithromycin is the treatment marked correct for lymphogranuloma venereum.

**Quick Tip:** LGV is caused by Chlamydia trachomatis; think of drugs that cover chlamydial infection.

• • •

**86.** Among the following groups, which combination is NOT useful for the treatment of hypertension?

- (A) Atenolol with amlodipine
- (B) Enalapril with Hydrochlorothiazide
- (C) Alpha methyldopa with clonidine
- (D) Amlodipine with lisinopril

**Correct Answer:** (C) Alpha methyldopa with clonidine

**SOLUTION:**

This question wants the antihypertensive pair that is not rational because the two drugs work in a way that overlaps rather than complements each other.

1. **Atenolol with amlodipine:** A beta blocker paired with a calcium channel blocker, two different mechanisms, so this

combination is rational and commonly used.

2. **Enalapril with hydrochlorothiazide:** An ACE inhibitor with a thiazide diuretic, a very standard and effective rational pair.
3. **Alpha methyldopa with clonidine:** Both drugs are centrally acting alpha-2 agonists, meaning they work through the same brainstem pathway. Stacking them adds side effects like drowsiness without adding real blood pressure benefit, so this pairing is not useful.
4. **Amlodipine with lisinopril:** A calcium channel blocker with an ACE inhibitor, again two different mechanisms working well together.

Three of the four pairs combine drugs from different classes and mechanisms, which is exactly what makes a combination rational. Methyldopa and clonidine break this rule because they share the same central mechanism.

Let's summarize:

- Good antihypertensive combinations mix different drug classes, such as a beta blocker with a calcium channel blocker, or an ACE inhibitor with a diuretic.
- Methyldopa and clonidine both act centrally through alpha-2 receptors, so combining them just adds side effects, not benefit.

So methyldopa with clonidine is the combination that is not useful for hypertension.

**Quick Tip:** Methyldopa and clonidine share the same central alpha-2 mechanism.



**87.** Consider the following:

1. Metolazone
2. Amiloride
3. Triamterene
4. Chlorthalidone

Which of these are the potassium sparing diuretics?

- (A) 1, 2 and 3  
(B) 1, 2 and 4  
(C) 2 and 3  
(D) 1, 3 and 4

**Correct Answer:** (C) 2 and 3

**SOLUTION:**

This question sorts four diuretics into those that spare potassium and those that waste it.

1. **Metolazone:** A thiazide-like drug that works on the distal tubule and causes the body to lose potassium, so it is not potassium sparing.
2. **Amiloride:** Blocks sodium channels in the collecting duct, cutting sodium reabsorption while leaving potassium alone. This is a true potassium sparing diuretic.
3. **Triamterene:** Acts through the same sodium channel blocking route as amiloride, so it is grouped with it as potassium sparing.
4. **Chlorthalidone:** Another thiazide-like drug, closely related to hydrochlorothiazide, and it also wastes potassium rather than sparing it.

Only amiloride and triamterene work through the collecting duct mechanism that protects potassium, while metolazone and chlorthalidone both work upstream in a way that loses potassium.

Let's summarize:

- Amiloride and triamterene block sodium channels in the collecting duct and spare potassium.
- Metolazone and chlorthalidone are thiazide-like drugs that waste potassium.

So the potassium sparing diuretics here are amiloride and triamterene, meaning statements 2 and 3 are correct.

**Quick Tip:** Amiloride and triamterene block sodium channels in the collecting duct.

• • •

**88.** Which one of the following features may NOT be seen in hypothyroidism?

- (A) Cold intolerance
- (B) Deafness
- (C) Pericardial effusion
- (D) Pretibial myxoedema

**Correct Answer:** (D) Pretibial myxoedema

**SOLUTION:**

This question picks out the one option that does not fit the usual features of an underactive thyroid.

1. **Cold intolerance:** A hallmark of hypothyroidism, since a slower metabolism generates less heat.
2. **Deafness:** Can occur in hypothyroidism from myxoedematous swelling around the inner ear structures, and is also seen in some congenital forms of the condition.
3. **Pericardial effusion:** A recognized complication of hypothyroidism known as myxoedema heart, where protein rich fluid gathers around the heart.
4. **Pretibial myxoedema:** This one is a trap. Despite the shared name, it results from an autoimmune attack on skin fibroblasts over the shins driven by TSH receptor antibodies, and it belongs to Graves' disease, a hyperthyroid condition, not hypothyroidism.

Three of the four choices trace back to the slowed metabolism and fluid retention of hypothyroidism, but pretibial myxoedema actually belongs to the opposite disease, hyperthyroidism.

Let's summarize:

- Cold intolerance, deafness, and pericardial effusion are all genuine hypothyroid features.
- Pretibial myxoedema is caused by Graves' disease related autoimmunity and belongs to hyperthyroidism, not hypothyroidism.

So pretibial myxoedema is the feature that may not be seen in hypothyroidism.

**Quick Tip:** Pretibial myxoedema belongs to Graves' disease, a hyperthyroid condition.



**89.** Lactic acidosis is more likely to be caused by which one of the following drugs?

- (A) Gliclazide
- (B) Acarbose
- (C) Metformin
- (D) Pioglitazone

**Correct Answer:** (C) Metformin

**SOLUTION:**

This question checks which antidiabetic drug carries the risk of lactic acidosis, a build up of lactate that can turn dangerous fast.

1. **Gliclazide:** A sulfonylurea that makes the pancreas release more insulin. Its main danger is hypoglycemia, not lactic acidosis.
2. **Acarbose:** Blocks sugar breakdown in the gut. It gives gas and loose stools, nothing to do with lactate.
3. **Metformin:** Cuts liver glucose output and shifts cells toward using glucose without oxygen, which raises lactate. When the kidneys cannot clear it, as in renal impairment, lactate piles up and causes lactic acidosis.
4. **Pioglitazone:** Acts on PPAR gamma, causing fluid retention and weight gain. It is not tied to lactic acidosis.

Metformin is the answer because it is the only drug here that changes how cells make energy in a way that raises lactate, and this effect turns dangerous when the kidneys cannot clear the drug.

Let's summarize:

- Metformin lowers liver glucose output and increases anaerobic glucose use, raising lactate.

- Renal impairment lets metformin build up, which is why lactic acidosis is a known risk with this drug.

So the drug most likely to cause lactic acidosis is metformin.

**Quick Tip:** Think about which antidiabetic drug changes how cells make energy and raises lactate.

• • •

**90.** In acromegaly, the patient is likely to have which of the following?

1. Impaired glucose tolerance
2. Galactorrhoea
3. Hypertension
4. Suppression of growth hormone with glucose

Which of these statements are correct?

- (A) 1, 2 and 4  
(B) 2, 3 and 4  
(C) 1, 3 and 4  
(D) 1, 2 and 3

**Correct Answer:** (D) 1, 2 and 3

**SOLUTION:**

Acromegaly comes from too much growth hormone after growth plates have closed, usually from a pituitary tumor. We need to check which of the four listed features truly happen in this condition.

1. **Impaired glucose tolerance:** Growth hormone blocks insulin action on tissues, so blood sugar control worsens. This is a real feature.

2. **Galactorrhoea:** The tumor causing acromegaly often makes extra prolactin too, or presses on the pituitary stalk, both of which raise prolactin and cause milk discharge. This is a real feature.
3. **Hypertension:** Growth hormone makes the kidneys hold on to salt and water, raising blood pressure. This is a real feature.
4. **Suppression of growth hormone with glucose:** In a healthy person, drinking glucose switches off GH release. In acromegaly, this switch off does not work, GH output stays high. So this is not a feature the patient shows, it is the opposite of what happens, and doctors use this failed suppression as a diagnostic test.

Since three of the four, impaired glucose tolerance, galactorrhoea and hypertension, genuinely occur in acromegaly, while GH failing to suppress is what really happens, the correct combination is 1, 2 and 3.

Let's summarize:

- Acromegaly causes insulin resistance, high prolactin effects, and salt retention leading to hypertension.
- GH does not switch off with glucose in acromegaly, and this failure is used to diagnose the disease.

So the correct answer is 1, 2 and 3.

**Quick Tip:** Recall what a glucose load normally does to growth hormone, and whether that still happens in acromegaly.

• • •

**91.** Which of the following statements about antibodies is NOT correct?

- (A) Human gamma globulins consist of at least 25 to 30 different proteins
- (B) A typical immunoglobulin consists of 4 subunits
- (C) Gamma globulins are formed predominantly by the liver
- (D) Immunoglobulins have a molecular weight of about 1,50,000

**Correct Answer:** (C) Gamma globulins are formed predominantly by the liver

**SOLUTION:**

We need the one wrong statement out of four claims about antibodies.

1. **25 to 30 different proteins:** Human gamma globulins really do form a large group of this size once you count all classes and subclasses. True.
2. **4 subunits:** A typical antibody like IgG is made of 2 heavy chains and 2 light chains, so 4 chains total. True.
3. **Formed predominantly by the liver:** Antibodies are made by plasma cells, which develop from B lymphocytes in lymph nodes, spleen, and bone marrow. The liver makes albumin and most clotting factors, but not gamma globulins. This claim is false.
4. **Molecular weight about 1,50,000:** This matches IgG closely. True.

Since three statements hold up and only the liver claim fails, that is the incorrect one.

Let's summarize:

- Antibodies come from plasma cells, not the liver.
- The liver makes other plasma proteins like albumin, but immunoglobulins are a B cell product.

So the statement that is NOT correct is that gamma globulins are formed predominantly by the liver.

**Quick Tip:** Think about which cells make antibodies, not which organ makes most other blood proteins.

• • •

**92.** A 35 year old pilot has been detected to have pulmonary tuberculosis. Which one of the following should NOT be prescribed for him?

- (A) Isoniazid
- (B) Ethambutol
- (C) Pyrazinamide
- (D) Streptomycin

**Correct Answer:** (B) Ethambutol

**SOLUTION:**

A pilot's job depends on flawless vision, so we need the TB drug most likely to harm the eyes.

1. **Isoniazid:** Known for nerve damage in the hands and feet and for liver strain, not eye problems. Safe to use here.
2. **Ethambutol:** Can inflame the optic nerve and specifically weakens red green color perception. For someone who must read cockpit displays and signal lights without error, this risk rules the drug out.
3. **Pyrazinamide:** Mostly affects the liver and can raise uric acid, causing joint pain, not vision issues.

4. **Streptomycin:** Known for harming hearing, balance, and the kidneys, not the eyes.

Only ethambutol threatens the exact skill a pilot cannot do without, clear color vision, so it is the drug to avoid.

Let's summarize:

- Ethambutol's main danger is optic neuritis with red green color blindness.
- This makes it unsuitable for anyone whose job depends on perfect vision, like a pilot.

So ethambutol should not be prescribed for this pilot.

**Quick Tip:** Think about which anti TB drug affects color vision.

• • •

**93.** Which of the following antibiotics, if administered to a premature infant, can cause grey baby syndrome?

- (A) Tetracycline
- (B) Chloramphenicol
- (C) Clindamycin
- (D) Netilmycin

**Correct Answer:** (B) Chloramphenicol

**SOLUTION:**

Grey baby syndrome is a specific, dangerous reaction in newborns. We need to find which drug causes it.

1. **Tetracycline:** Known for staining a child's growing teeth and affecting bone growth, a different problem altogether.
2. **Chloramphenicol:** The infant liver, especially in premature babies, lacks enough of the enzyme needed to inactivate this drug. It piles up in the blood, poisons cell energy production, and the baby turns pale grey, feeds poorly, becomes floppy, and can go into circulatory collapse. This is grey baby syndrome.
3. **Clindamycin:** Mostly linked to diarrhea and gut upset, not this syndrome.
4. **Netilmycin:** An aminoglycoside whose main risks are to hearing and the kidneys, unrelated to grey baby syndrome.

Only chloramphenicol matches the enzyme deficiency and toxic buildup that defines grey baby syndrome.

Let's summarize:

- Premature infants cannot clear chloramphenicol well because their liver enzyme for this job is immature.
- The drug then builds up and causes the grey, floppy, collapsed state called grey baby syndrome.

So chloramphenicol is the antibiotic responsible for grey baby syndrome.

**Quick Tip:** Think about the antibiotic that a premature infant's liver cannot break down well.

• • •

**94.** A 50 year old patient wakes up with excruciating pain at the base of the great toe with redness and swelling. Which would be the most desirable drug?

- (A) Allopurinol
- (B) Probenecid
- (C) Sulfinpyrazone
- (D) Indomethacin

**Correct Answer:** (D) Indomethacin

**SOLUTION:**

Sudden pain, redness, and swelling at the big toe is the classic picture of acute gout. We need the best drug to use right now.

1. **Allopurinol:** Lowers uric acid production for the long term, but starting it during an active attack can stir up crystals and make pain worse. Not for now.
2. **Probenecid:** Helps the kidneys flush out more uric acid, again a long term control drug. Starting it mid attack carries the same risk of flaring the pain.
3. **Sulfinpyrazone:** Works the same way as probenecid, useful for prevention later, risky if started during the acute attack.
4. **Indomethacin:** A strong anti inflammatory that calms the joint fast without touching uric acid levels, exactly what an acute attack needs.

The other three drugs are for long term uric acid control and can even worsen an acute attack if started too soon, so indomethacin, an anti inflammatory, is the safe and effective choice right now.

Let's summarize:

- Acute gout needs fast anti inflammatory relief, not a change in uric acid levels.

- Urate lowering drugs like allopurinol, probenecid, and sulfinpyrazone are for later, after the attack settles.

So indomethacin is the most desirable drug here.

**Quick Tip:** Think about whether this drug treats the acute attack or lowers uric acid for the long run.

• • •

**95.** Which one of the following diseases is NOT developed by intrauterine growth retarded, full term Low Birth Weight infants in later life?

- (A) Coronary heart disease
- (B) Hypertension
- (C) Diabetes
- (D) Malabsorption syndrome

**Correct Answer:** (D) Malabsorption syndrome

**SOLUTION:**

Full term babies with intrauterine growth retardation are born small, a pattern called low birth weight, and this predicts certain adult diseases through what is known as the Barker hypothesis, or fetal programming. We check each option against this idea.

1. **Coronary heart disease:** Studies tying low birth weight to heart disease risk in adulthood are a cornerstone of the Barker hypothesis. This is a real, established link.
2. **Hypertension:** Poor fetal growth changes how the kidneys and blood vessels form, and this raises blood pressure risk later. A real, established link.

3. **Diabetes:** Fetal undernutrition programs the body to hold onto energy, making insulin resistance and type 2 diabetes more likely in adulthood. A real, established link.
4. **Malabsorption syndrome:** This is a gut absorption problem, usually from conditions such as celiac disease or pancreatic disease, and it has no known connection to fetal growth restriction. There is no established link here.

Three of the four options, heart disease, hypertension and diabetes, are textbook consequences of fetal growth restriction. Malabsorption syndrome stands apart because it is a gut disorder with a different cause entirely.

Let's summarize:

- The Barker hypothesis links low birth weight at term to coronary heart disease, hypertension, and diabetes in adult life.
- Malabsorption syndrome is not part of this fetal programming picture.

So the disease NOT developed by these infants is malabsorption syndrome.

**Quick Tip:** Think about the Barker hypothesis and which listed disease has nothing to do with fetal programming.

• • •

**96.** A person working in a hot environment who consumes more water without salt is likely to develop a condition called

- (A) Heat stroke
- (B) Heat exhaustion
- (C) Heat cramps
- (D) Heat hyperpyrexia

**Correct Answer:** (C) Heat cramps

**SOLUTION:**

Sweating in a hot job removes both water and salt from the body. This question describes someone who drinks a lot of water back but skips the salt, and asks what this causes.

1. **Heat stroke:** A severe, high body temperature emergency, often with no sweating and confusion. It is not about salt replacement, so it does not fit.
2. **Heat exhaustion:** Comes from losing both water and salt together, causing weakness and dizziness, but it is not defined by a water only replacement pattern.
3. **Heat cramps:** Happens exactly when someone replaces sweat losses with water alone and skips the salt. Blood sodium drops, and the working muscles cramp painfully. This matches the question perfectly.
4. **Heat hyperpyrexia:** Another term tied to a dangerously high core temperature, similar to heat stroke, not to a salt deficiency picture.

The clue, more water without salt, points straight at low blood sodium from unbalanced replacement, which is the defining cause of heat cramps.

Let's summarize:

- Sweat carries away salt along with water, so replacing only water can drop blood sodium.
- Low sodium from this pattern causes painful muscle cramps, known as heat cramps.

So the condition this worker develops is heat cramps.

**Quick Tip:** Think about what happens to muscles when the body loses salt faster than it replaces it.

• • •

97.

**Assertion (A):** The term 'Eradication' means termination of all transmissions of infection.

**Reason (R):** It involves complete destruction of the infective agent.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (A) Both A and R are true and R is the correct explanation of A.

**SOLUTION:**

This question checks whether we know the exact meaning of eradication in public health, and whether the given reason really backs that meaning up.

1. **Assertion:** Eradication is defined as stopping every single chain of transmission of an infection, everywhere on earth, for good. That is exactly what the assertion says, so it is true.
2. **Reason:** If transmission has truly stopped everywhere, the germ has no host left to live and multiply in nature, so it is effectively wiped out as a spreading organism. This is a true statement and it is also the direct cause behind the assertion.

Since both statements are true, and the reason is the actual explanation for why eradication means what it means, the correct choice is that both are true with R explaining A.

Let's summarize:

- Control lowers cases to a manageable level, elimination brings new cases to zero in one area, eradication wipes out transmission everywhere.
- Smallpox is the one disease officially eradicated this way, since the virus stopped spreading anywhere in the world.

So the final answer is: both A and R are true, and R is the correct explanation of A.

**Quick Tip:** Eradication is the strongest of the three disease-control terms, stronger than control or elimination.

• • •

98.

**Assertion (A):** Abortion may be induced at twenty weeks of gestation without second medical opinion.

**Reason (R):** The conditions for medical termination of pregnancy have been liberalized in India.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (D) A is false but R is true.

**SOLUTION:**

This question tests the doctor-opinion rule under India's Medical Termination of Pregnancy Act, 1971, at a pregnancy of twenty weeks.

1. **Assertion:** The Act splits pregnancy into bands: up to 12 weeks needs one doctor's opinion, and from 12 up to 20 weeks needs two doctors' opinions. Twenty weeks sits in the second band, so a second opinion is required. This makes the assertion false.
2. **Reason:** Before 1971, abortion was mostly banned under the Indian Penal Code. The MTP Act opened up legal grounds for termination, which is genuinely a liberalization of the law. So the reason is true on its own merit.

Since the assertion fails the actual rule but the reason is a correct historical fact, the pairing is: assertion false, reason true.

Let's summarize:

- Up to 12 weeks: one doctor's opinion is enough.

- 12 to 20 weeks, including the twenty week mark: two doctors' opinions are needed.
- The MTP Act did liberalize abortion law in India, but that liberalization still keeps this two-doctor safeguard at twenty weeks.

So the final answer is: A is false but R is true.

**Quick Tip:** Check which gestation band twenty weeks falls into under the MTP Act rules on number of doctors required.

• • •

99.

**Assertion (A):** All newborns should be screened for hypothyroidism at birth.

**Reason (R):** Treatment at birth for hypothyroidism can assure normal mental development.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (A) Both A and R are true and R is the correct explanation of A.

**SOLUTION:**

This question links newborn thyroid screening to the actual benefit that screening is meant to deliver.

1. **Assertion:** Screening every newborn for hypothyroidism is a standard part of newborn care, because a baby with this condition looks normal at birth and cannot be picked up by a simple physical exam alone. This makes the assertion true.
2. **Reason:** Thyroid hormone drives brain growth in the first weeks of life. Giving replacement hormone early, ideally within the first month, prevents the intellectual disability that would otherwise follow. This is also a true and well-established fact.

Screening exists precisely because early treatment protects the brain, so the reason is not just true on its own, it is the actual justification for the assertion.

Let's summarize:

- Congenital hypothyroidism is clinically silent at birth.
- A heel-prick TSH test catches it before symptoms appear.
- Starting treatment early prevents permanent mental impairment, which is exactly why screening is recommended.

So the final answer is: both A and R are true, and R is the correct explanation of A.

**Quick Tip:** Congenital hypothyroidism looks normal at birth but causes irreversible brain damage if treatment is delayed.

• • •

**100.**

**Assertion (A):** The 23 valent pneumococcal vaccine is not recommended for routine use in children.

**Reason (R):** Most pneumococcal strains are still susceptible to penicillin.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (C) A is true but R is false.

**SOLUTION:**

This question separates two different claims: one about vaccine policy for children, and one about antibiotic resistance in pneumococcus.

1. **Assertion:** The 23-valent pneumococcal vaccine is a pure polysaccharide vaccine, and young children cannot build a strong antibody response to plain polysaccharide antigens. That is why it is kept out of routine childhood use and a conjugate vaccine is used instead for infants. So the assertion is true.
2. **Reason:** Saying most pneumococcal strains are still penicillin-susceptible ignores the well documented rise of penicillin-resistant and reduced-susceptibility strains that had already become a major concern by this period, in India and worldwide. So the reason is not correct.

Because the reason is false, it cannot explain the assertion, even though the assertion itself stands true for a completely different reason involving immune maturity in young children.

Let's summarize:

- Polysaccharide vaccines like PPSV23 are weak immunogens before age two.
- Conjugate vaccines solve this by attaching a protein carrier.

- Penicillin resistance in pneumococcus was rising, not staying low, which is why the reason fails.

So the final answer is: A is true but R is false.

**Quick Tip:** Think about why polysaccharide vaccines work poorly in infants, and about rising penicillin resistance in pneumococcus.

• • •

**101.**

**Assertion (A):** Lumbar puncture is indicated in a child with fever and asymmetric flaccid limb weakness.

**Reason (R):** The diagnosis of Guillain-Barre syndrome can be established by albuminocytologic dissociation on CSF analysis.

- (A) Both A and R are true and R is the correct explanation of A.  
(B) Both A and R are true but R is NOT the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.

**Correct Answer:** (B) Both A and R are true but R is NOT the correct explanation of A.

**SOLUTION:**

This question checks whether lumbar puncture is truly indicated in a febrile child with asymmetric flaccid weakness, and whether the stated reason about Guillain-Barre syndrome (GBS) is really why.

1. **Assertion:** A child with fever and flaccid weakness needs a lumbar puncture to look for infective causes such as poliovirus

involvement or meningoencephalitis, and to study the CSF pattern. This makes the assertion true.

2. **Reason:** Albuminocytologic dissociation, meaning raised CSF protein with a nearly normal cell count, is indeed the classic CSF clue used to support a diagnosis of GBS. So this statement is also true by itself.

The mismatch is in the clinical picture: GBS typically causes symmetric weakness without fever, while this child has fever and asymmetric weakness, a pattern that points toward an infective cause rather than GBS. So the reason, though true in general, does not explain why the lumbar puncture is done in this specific case.

Let's summarize:

- Fever with asymmetric flaccid weakness suggests an infective cause, not GBS.
- Lumbar puncture here helps rule out infection, not confirm GBS.
- Albuminocytologic dissociation is a real GBS finding, just not relevant to this presentation.

So the final answer is: both statements are true, but R does not correctly explain A.

**Quick Tip:** GBS is usually symmetric and afebrile; fever with asymmetric weakness points elsewhere.



**102.**

**Assertion (A):** Systemic estrogens as HRT are indicated in postmenopausal women with hypertriglyceridemia.

**Reason (R):** The systemic estrogens induce the hepatic synthesis of lipoproteins.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (D) A is false but R is true.

**SOLUTION:**

This question is about whether oral estrogen HRT suits a postmenopausal woman who already has high triglycerides.

1. **Assertion:** Oral estrogen passes through the liver first, and there it boosts triglyceride-rich VLDL production, pushing triglycerides even higher. In a woman already dealing with hypertriglyceridemia, this is a risk rather than a benefit, so systemic oral estrogen is not the right choice here. The assertion is therefore false.
2. **Reason:** The claim that estrogen drives hepatic lipoprotein synthesis is medically accurate. This liver effect is a well known and true pharmacological fact about oral estrogens.

So the reason is true and actually explains why estrogen should be avoided or used cautiously here, but the assertion draws the wrong conclusion by calling it indicated instead of risky. That combination is: assertion false, reason true.

Let's summarize:

- Oral estrogen raises hepatic VLDL and triglyceride output through the first-pass effect.
- This makes it a poor choice in women who already have high triglycerides.
- A transdermal route bypasses the liver first-pass effect and is safer in this setting.

So the final answer is: A is false but R is true.

**Quick Tip:** Oral estrogen raises hepatic triglyceride output through its first-pass liver effect.

...

**103.**

**Assertion (A):** Ferrous sulphate should not be given to pregnant women who are at high risk of PIH.

**Reason (R):** Ferrous sulphate increases free radicals which induce serum lipid peroxide formation.

- (A) Both A and R are true and R is the correct explanation of A.  
(B) Both A and R are true but R is NOT the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.

**Correct Answer:** (A) Both A and R are true and R is the correct explanation of A.

**SOLUTION:**

This question links routine iron supplementation to the oxidative stress theory behind pregnancy-induced hypertension (PIH).

1. **Assertion:** In women who already have enough iron stores, adding more ferrous sulphate through routine supplementation gives the body extra free iron that is not really needed. In those at high risk of PIH, this is considered unwise, so the assertion holds true.
2. **Reason:** Free iron acts as a catalyst that generates reactive free radicals, and these free radicals attack lipids in cell membranes, producing lipid peroxides. This is an accurate description of the underlying chemistry, so the reason is true as well.

PIH is linked to oxidative injury to blood vessel walls, and the iron-driven free radical pathway described in the reason is precisely the mechanism used to justify caution with iron in high risk women. So the reason is not just true, it is the actual explanation for the assertion.

Let's summarize:

- PIH involves oxidative injury to blood vessels.
- Excess free iron fuels free radical generation and lipid peroxidation.
- This is why routine iron supplementation is questioned in women already at high risk of PIH.

So the final answer is: both A and R are true, and R is the correct explanation of A.

**Quick Tip:** Extra iron in a woman with adequate stores can fuel free radical

generation, worsening oxidative vascular injury.

• • •

**104.**

**Assertion (A):** Supravaginal elongation of cervix occurs in uterovaginal prolapse.

**Reason (R):** There is gaping genital hiatus but the ligamentous support of uterus is strong.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (C) A is true but R is false.

**SOLUTION:**

This question checks a classic anatomical feature of uterovaginal prolapse against a claim about how strong the uterine ligaments are.

1. **Assertion:** As the uterus and cervix are pulled downward over time in prolapse, chronic congestion and traction stretch the supravaginal part of the cervix, causing it to elongate. This is a genuine and well documented finding in long-standing prolapse, so the assertion is true.
2. **Reason:** A gaping genital hiatus is indeed common in prolapse because the pelvic floor muscles weaken, but claiming the ligamentous support of the uterus stays strong is incorrect. Prolapse happens specifically because the cardinal and uterosacral ligaments lose their supporting strength.

Since weak ligamentous support is the actual cause of prolapse, calling it strong makes the reason statement false, even though the assertion about cervical elongation is true.

Let's summarize:

- Cervical elongation is a real, recognized feature of chronic uterovaginal prolapse.
- Prolapse results from weakened, not strong, uterine ligament support.
- A gaping genital hiatus fits the picture, but strong ligaments do not.

So the final answer is: A is true but R is false.

**Quick Tip:** Prolapse happens because uterine ligamentous support is weak, not strong.

• • •

**105.**

**Assertion (A):** A child who has had an acute attack of poliomyelitis should be administered oral polio vaccine.

**Reason (R):** There is no cross-immunity between the different types of polio viruses.

- (A) Both A and R are true and R is the correct explanation of A
- (B) Both A and R are true but R is NOT the correct explanation of A
- (C) A is true but R is false
- (D) A is false but R is true

**Correct Answer:** (B) Both A and R are true but R is NOT the correct explanation of A

**SOLUTION:**

**Step 1:** Check the assertion.

A child who had paralytic polio was infected by only one of the three poliovirus types. Giving OPV afterward is still recommended so the child builds immunity to the other two types. This makes the assertion true.

**Step 2:** Check the reason.

The reason says there is no cross-immunity between the different polio virus types. This is a correct, well known virology fact by itself.

**Step 3:** See if the reason truly explains the assertion.

Continuing the vaccine schedule after an attack is a general immunization policy, not something derived only from the cross-immunity fact. The two statements stand independently true, but the reason is not framed as the direct cause the assertion relies on.

**Step 4:** Conclude.

Both statements are true, but the reason does not directly explain the assertion. The answer is that both A and R are true, but R is not the correct explanation of A.

**Quick Tip:** Recall that OPV covers three separate poliovirus serotypes.



**106.**

Match List I (Health Planning Committees) with List II (Main Recommendations/Important Results) and select the correct answer using the codes given below the lists.

| List I                    | List II                                                                 |
|---------------------------|-------------------------------------------------------------------------|
| A. Shrivastav Committee   | 1. Malaria surveillance workers to look after family planning work also |
| B. Chadah Committee       | 2. Integration of services from the highest to the lowest levels        |
| C. Kartar Singh Committee | 3. Led to creation of Health Guides                                     |
| D. Jungalwalla Committee  | 4. Led to creation of multipurpose worker                               |

- (A) A-3, B-4, C-1, D-2  
(B) A-3, B-1, C-4, D-2  
(C) A-2, B-1, C-4, D-3  
(D) A-2, B-4, C-1, D-3

**Correct Answer:** (B) A-3, B-1, C-4, D-2

**SOLUTION:**

**Step 1:** Line up the committees by their real job.

Four Indian health planning committees are listed. Each one is remembered in public health teaching for one main outcome.

**Step 2:** Chadah Committee, 1963.

It told the malaria surveillance workers, who were already visiting villages, to also handle family planning tasks. This is item 1.

**Step 3: Jungalwalla Committee, 1967.**

Its whole purpose was integrating health services across all levels of the system, from top administrators down to field workers. This is item 2.

**Step 4: Kartar Singh Committee, 1973.**

It combined the many separate vertical programme workers into a single multipurpose health worker. This is item 4.

**Step 5: Shrivastav Committee, 1975.**

It set up village level Health Guides as community volunteers. This is item 3.

**Step 6: Conclude.**

So the pairing is A-3, B-1, C-4, D-2. This differs from the answer marked in the source paper, but it is the pairing that matches each committee's documented history, so it is treated as the correct code here.

**Quick Tip:** Jungalwalla Committee's name itself points to integration of services.

• • •

**107.** The poverty line limit for rural areas is the purchasing capacity for a daily intake of 2400 calories per person. Which one of the following calorie limits is for urban areas?

- (A) 1900
- (B) 2100
- (C) 2400
- (D) 2800

**Correct Answer:** (B) 2100

**SOLUTION:**

**Step 1:** Recall why rural and urban norms differ.

Poverty lines in India were first fixed using minimum calorie needs. Rural work involves more physical labour on average, so its calorie norm was set higher, at 2400 kcal per day.

**Step 2:** Find the urban figure.

Urban lifestyles were assumed to need fewer calories, and the fixed urban norm is 2100 kcal per person per day.

**Step 3:** Rule out the other choices.

1900 kcal was never an official norm. 2400 kcal already belongs to rural areas as stated in the question. 2800 kcal is even higher than the rural figure, which does not make sense for urban areas with lower assumed calorie needs.

**Step 4:** Conclude.

The correct urban calorie limit is 2100 kcal per person per day.

**Quick Tip:** Urban poverty line calorie needs are lower than the rural norm.



**108.** Which of the following is/are used as operational indicators in antileprosy activity?

- (A) Incidence
- (B) Prevalence rate
- (C) Case detection rate
- (D) All of the above

**Correct Answer:** (D) All of the above

**SOLUTION:**

**Step 1: Note the source defect.**

The original paper's printed options for this question were garbled, apparently mixed up with numbers from a nearby question. The options used here are the recognised operational indicators for leprosy control, matched to the marked answer.

**Step 2: List what leprosy programmes actually track.**

A leprosy elimination programme is judged by prevalence rate, which counts existing active cases, by case detection rate, which shows how fast new patients are found, and by incidence, which reflects fresh transmission in the community.

**Step 3: See why one indicator is not enough.**

Prevalence alone can look low even while new infections keep happening, so incidence and detection rate are tracked alongside it to get a full and honest picture of programme performance.

**Step 4: Conclude.**

Because each of the three measures adds separate useful information, all of them together are used as operational indicators.

**Quick Tip:** Leprosy control is judged using more than one type of rate together.

• • •

**109.** With increased plan outlays for the National AIDS Control Programme, the secondary dividends of these interventions shall directly benefit

- (A) RCH Programme
- (B) MCH Services
- (C) Immunization Programme
- (D) National Tuberculosis Control Programme

**Correct Answer:** (D) National Tuberculosis Control Programme

**SOLUTION:**

**Step 1: Flag the missing key.**

No answer was given for this question in the source, so the answer here is worked out from how India's health programmes are linked.

**Step 2: Identify the closest overlap.**

HIV weakens the immune system, and tuberculosis is by far the most frequent infection that follows in people with HIV. Because of this, TB control and AIDS control programmes in India run joint collaborative activities, sharing diagnostic services, referral systems and trained staff.

**Step 3: Compare with the other options.**

RCH, MCH services and immunization mainly cover maternal, newborn and child health. They gain from AIDS control mostly

through prevention of mother to child HIV transmission, which is a narrower link compared with the constant, programme-wide overlap between TB and HIV care.

**Step 4: Conclude.**

Extra investment in AIDS control gives its clearest secondary benefit to the National Tuberculosis Control Programme.

**Quick Tip:** Think about which disease most often occurs together with HIV infection.

...

**110.** Under the National Programme for Control of Blindness, to define blindness, the visual acuity should be less than

- (A) 3/60
- (B) 6/60
- (C) 1/60
- (D) 6/24

**Correct Answer:** (A) 3/60

**SOLUTION:**

**Step 1: Recall how visual acuity is written.**

A visual acuity fraction compares the test distance to the distance a normally sighted person can read the same letters from. The smaller the fraction, the worse the vision.

**Step 2: Recall the NPCB rule.**

India's National Programme for Control of Blindness defines a person

as blind when the better eye, even with correction, sees at less than 3/60, or the visual field narrows to under 10 degrees.

**Step 3: Check the alternatives.**

6/60 and 6/24 are used to classify low vision or partial sight, not blindness. 1/60 is a smaller and stricter number than the actual programme cut-off.

**Step 4: Conclude.**

The defined cut-off for blindness under NPCB is visual acuity less than 3/60.

**Quick Tip:** NPCB defines blindness using the 3/60 visual acuity cut-off.

• • •

**111.**

Match List I (Organization/Agency) with List II (Programme) and select the correct answer using the codes given below the lists.

| List I          | List II                          |
|-----------------|----------------------------------|
| A. USAID        | 1. Blindness Control             |
| B. Colombo Plan | 2. Agriculture and Industry      |
| C. SIDA         | 3. Tuberculosis Control          |
| D. DANIDA       | 4. Technical Cooperation Mission |

- (A) A-4, B-2, C-3, D-1  
(B) A-1, B-3, C-2, D-4  
(C) A-4, B-3, C-2, D-1  
(D) A-1, B-2, C-3, D-4

**Correct Answer:** (A) A-4, B-2, C-3, D-1

**SOLUTION:**

**Step 1: USAID.**

This American aid agency ran its India operations originally under the name Technical Cooperation Mission, so it pairs with item 4.

**Step 2: Colombo Plan.**

This multi-country aid arrangement mainly funded agriculture and industry development, so it pairs with item 2.

**Step 3: SIDA.**

Sweden's aid agency is tied closely to India's tuberculosis control effort, so it pairs with item 3.

**Step 4: DANIDA.**

Denmark's aid agency backed India's blindness control programme, so it pairs with item 1.

**Step 5: Conclude.**

The full match is A-4, B-2, C-3, D-1.

**Quick Tip:** SIDA is remembered for supporting India's TB control work.

• • •

**112.** In respect of type 1 error in the field of medical statistics, which one of the following is not correct?

- (A) It is also called alpha error.
- (B) It is often assigned a value of 0.05 in studies.
- (C) It is equal to 1 minus the beta error.
- (D) It is used to determine sample size.

**Correct Answer:** (C) It is equal to 1 minus the beta error.

**SOLUTION:**

**Step 1: Define the two errors.**

Alpha is the type 1 error, the risk of rejecting a null hypothesis that is actually true. Beta is the type 2 error, the risk of accepting a null hypothesis that is actually false.

**Step 2: Define power separately.**

Power of a study is 1 minus beta. This describes the chance of correctly detecting a real effect, and it has nothing to do with alpha directly.

**Step 3: Test each statement.**

Alpha error is indeed another name for type 1 error, so that statement holds. A 0.05 cut-off for alpha is standard practice, so that also holds. Alpha does feed into sample size calculations along with power and expected effect size, so that statement holds too. Only the claim that type 1 error equals 1 minus beta error is false, since that formula belongs to power, not to alpha.

**Step 4: Conclude.**

The wrong statement is that type 1 error is equal to 1 minus the beta error.

**Quick Tip:** 1 minus beta is the definition of power, not of alpha.

**113.** The decadal exercise of census operation is done over a period of time, but the population count is assumed to be one existing on

- (A) January 1st
- (B) March 1st
- (C) April 1st
- (D) March 31st

**Correct Answer:** (B) March 1st

**SOLUTION:**

**Step 1: Understand the setup.**

Counting every person in a country the size of India cannot happen in one instant, so the actual field work for the census goes on for weeks.

**Step 2: Learn the fix used to solve this.**

To give one clean number, planners pick a single moment, called the reckoning date, and treat everybody counted as if they existed exactly then. For India that fixed moment is midnight of 1st March of the census year.

**Step 3: Check why the other dates fail.**

January 1st has no role in Indian census rules. April 1st is used only when working out yearly birth and death rates, not the census count itself. March 31st looks close but is one day off the real reckoning point.

**Step 4: State the answer.**

The census figure is read as the population as on

March 1st

**Quick Tip:** The census reckoning date, not the enumeration period, decides the population figure.

...

114.

Match List I (Disease) with List II (Vector) and select the correct answer using the codes given below the lists.

| List I (Disease)             | List II (Vector) |
|------------------------------|------------------|
| A. Scabies                   | 1. Soft tick     |
| B. Fish tapeworm infestation | 2. Cyclops       |
| C. Relapsing fever           | 3. Sarcoptes     |
| D. Kyasanur Forest disease   | 4. Hard tick     |

- (A) A-3, B-2, C-1, D-4  
(B) A-4, B-1, C-2, D-3  
(C) A-3, B-1, C-2, D-4  
(D) A-4, B-2, C-1, D-3

**Correct Answer:** (A) A-3, B-2, C-1, D-4

**SOLUTION:**

This question tests knowledge of the vectors and intermediate hosts linked to four different diseases. Let's build each pair one at a time.

1. **Scabies:** caused directly by the itch mite *Sarcoptes scabiei* burrowing into the skin, so the mite itself is the agent to match here, giving Scabies with Sarcoptes.

2. **Fish tapeworm infestation:** the larva of *Diphyllbothrium latum* first develops inside a tiny crustacean called Cyclops before moving on to fish, so this disease pairs with Cyclops.
3. **Relapsing fever:** the tick borne form of this *Borrelia* infection is carried by the soft tick *Ornithodoros*, giving the pair Relapsing fever with Soft tick.
4. **Kyasanur Forest disease:** this viral fever seen in forest workers spreads through the bite of the hard tick *Haemaphysalis spinigera*, giving the pair Kyasanur Forest disease with Hard tick.

Putting all four pairs together gives A-3, B-2, C-1, D-4, which matches the first coded option exactly.

Let's summarize:

- Scabies: *Sarcoptes* (the mite is the agent itself)
- Fish tapeworm: Cyclops (first intermediate host)
- Relapsing fever: Soft tick (*Ornithodoros*)
- Kyasanur Forest disease: Hard tick (*Haemaphysalis*)

So the correct code is A-3, B-2, C-1, D-4.

**Quick Tip:** Think of each disease's actual biological carrier: a mite, a water flea, a soft tick, or a hard tick.

• • •

**115.** Effect of pyrethrum on mosquitoes is described as

- (A) Residual
- (B) Repellent
- (C) Knock down
- (D) Contact

**Correct Answer:** (C) Knock down

**SOLUTION:**

**Step 1: Understanding the Concept:**

Pyrethrum comes from Chrysanthemum flowers and acts on the nerve membrane sodium channels of insects.

**Step 2: Key Formula or Approach:**

Because it keeps the sodium channels open too long, the insect's nerves fire again and again, and the insect becomes paralysed almost at once. Vector control books name this fast paralysis the knock down effect.

**Step 3: Detailed Explanation:**

This knock down effect is the defining, named property of pyrethrum. It is why pyrethrum sprays are chosen when a quick, visible drop of flying mosquitoes is wanted, for example during aircraft disinsection. Residual action, staying active on walls for weeks, is instead the strong point of DDT, since pyrethrum degrades quickly in light and heat. A repellent keeps insects from landing at all, which is a separate class of action seen with agents like DEET, not with pyrethrum. Contact only tells us the entry route into the insect body, it does not name the special effect pyrethrum is famous for.

**Step 4: Final Answer:**

The effect of pyrethrum on mosquitoes is best described as the knock down effect.

**Knock down effect**

**Quick Tip:** Pyrethrum is famous for causing fast, temporary insect paralysis, not for long lasting surface action.

• • •

**116.** A screening test applied to detect diabetes in a population over 40 years of age should satisfy all of the following criteria, EXCEPT

- (A) Validity
- (B) Reproducibility
- (C) Feasibility
- (D) Ingenuity

**Correct Answer:** (D) Ingenuity

**SOLUTION:**

Screening tests are judged against a short, well known checklist. Let's go through each option against that checklist.

1. **Validity:** this checks whether the test truly separates diseased people from healthy people, using sensitivity and specificity. It is a core requirement of any screening test.
2. **Reproducibility:** this checks that the test gives the same result when repeated. Without this, no one can trust a single test run, so it is also a required property.
3. **Feasibility:** this checks whether the test can actually be run on a large population with the money, staff, and equipment on hand. It is a standard, accepted requirement in every screening programme, including diabetes screening.
4. **Ingenuity:** this simply means cleverness of design. It is not part of the standard checklist used to judge screening tests anywhere

in public health teaching.

Since validity, reproducibility, and feasibility are all genuine, accepted criteria, the one term left out, ingenuity, is the correct answer to this EXCEPT question.

Let's summarize:

- Validity, reproducibility, and feasibility are all real, standard criteria for a screening test.
- Ingenuity is not a recognized criterion at all.

So the property a diabetes screening test need not satisfy is ingenuity.

**Quick Tip:** Three of the options are textbook screening test criteria; one is simply not a recognized criterion at all.

• • •

**117.** Which one of the following is NOT the cause of wide pulse pressure?

- (A) Severe aortic regurgitation
- (B) Severe mitral regurgitation
- (C) Severe tricuspid regurgitation
- (D) Severe anemia

**Correct Answer:** (C) Severe tricuspid regurgitation

**SOLUTION:**

**Step 1: Understanding the Concept:**

Pulse pressure is systolic pressure minus diastolic pressure. It goes up when either the stroke volume or systolic pressure rises, or when diastolic pressure drops because blood escapes from the arterial

system faster than usual.

**Step 2: Key Formula or Approach:**

Check each condition for one of two patterns: a leaky aortic valve causing diastolic run off, or a high output state that raises stroke volume and systolic pressure.

**Step 3: Detailed Explanation:**

Severe aortic regurgitation lets blood flow back into the left ventricle during diastole, dropping diastolic pressure sharply while the next beat carries a big stroke volume, giving the classic wide, bounding pulse.

Severe anemia forces high cardiac output to meet oxygen needs, raising stroke volume and systolic pressure while diastolic pressure stays low, again widening pulse pressure.

Severe mitral regurgitation sends part of the stroke volume backward into the left atrium rather than forward into the aorta, so it does not push pulse pressure wide the way aortic regurgitation does.

Severe tricuspid regurgitation is purely a right heart problem, it raises right atrial and venous pressures, not the systemic arterial pulse pressure, so it has no real role in widening pulse pressure.

**Step 4: Final Answer:**

The lesion that is not a cause of wide pulse pressure is severe tricuspid regurgitation.

Severe tricuspid regurgitation

**Quick Tip:** Wide pulse pressure needs either aortic diastolic runoff or a high output state; think about which valve lesion never causes either.

**118.** A 5-year old boy, a known patient of bronchial asthma, presents with cough, wheezing and breathlessness. Examination shows respiratory rate 48/minute, pulsus paradoxus and bilateral rhonchi. The most appropriate immediate treatment is

- (A) Intravenous theophylline and corticosteroids
- (B) Intravenous theophylline and nebulized salbutamol
- (C) Nebulized salbutamol and ipratropium
- (D) Nebulized salbutamol and intravenous corticosteroids

**Correct Answer:** (D) Nebulized salbutamol and intravenous corticosteroids

**SOLUTION:**

This child's fast breathing, pulsus paradoxus, and bilateral rhonchi on top of known asthma point straight to an acute severe asthma attack. Let's weigh each treatment option against what current asthma guidelines recommend as the first move.

**1. Intravenous theophylline and corticosteroids:**

theophylline has a narrow safety window and easily causes vomiting, arrhythmia, or seizures, so it is no longer used as first-line therapy even though the corticosteroid part is correct.

**2. Intravenous theophylline and nebulized salbutamol:**

nebulized salbutamol is right, but pairing it with theophylline instead of a corticosteroid still carries the same theophylline safety concern and skips the needed anti-inflammatory drug.

**3. Nebulized salbutamol and ipratropium:** both are good inhaled bronchodilators and often used together in severe attacks, but this pairing alone does not include a corticosteroid,

which is needed to control the airway inflammation driving the attack.

**4. Nebulized salbutamol and intravenous corticosteroids:**

this gives fast bronchodilation along with early anti-inflammatory treatment, matching exactly what guidelines recommend for an acute severe asthma attack.

The fourth option covers both jobs, opening the airway quickly and calming the inflammation, so it is the most appropriate immediate treatment.

Let's summarize:

- Nebulized salbutamol is the fast bronchodilator of choice in an acute attack.
- Systemic corticosteroids must be started early to control inflammation.
- Intravenous theophylline is avoided as first-line therapy due to its narrow safety margin.

So the best immediate treatment is nebulized salbutamol with intravenous corticosteroids.

**Quick Tip:** Acute severe asthma needs fast inhaled bronchodilation plus early systemic steroid, not intravenous theophylline.

• • •

**119.**

What is the correct sequence of the following while resuscitating an infant with Foreign Body Airway Obstruction?

1. Chest thrust
2. Tongue-jaw lift
3. Back blows

Select the correct sequence from the codes given below.

- (A) 1, 3, 2
- (B) 3, 2, 1
- (C) 3, 1, 2
- (D) 2, 1, 3

**Correct Answer:** (C) 3, 1, 2

**SOLUTION:**

**Step 1: Understanding the Concept:**

An infant choking on a foreign body cannot get abdominal thrusts like an older child or adult, because the immature abdomen and organs can be hurt by the force. The infant sequence instead relies on back blows and chest thrusts.

**Step 2: Key Formula or Approach:**

Remember the rule: back blows first, chest thrusts next, and only then check the mouth with a tongue-jaw lift to look for the object before trying further steps.

**Step 3: Detailed Explanation:**

Step one, back blows: hold the infant face down along the forearm and

give firm blows between the shoulder blades to jar the object loose.

Step two, chest thrust: turn the infant face up and press over the lower sternum, in the same spot used for chest compressions, to build pressure behind the object.

Step three, tongue-jaw lift: lift the tongue and lower jaw forward to open the mouth and look directly for the object, removing it only if it is clearly visible.

Matching this order to the question's numbering, back blows is item 3, chest thrust is item 1, and tongue-jaw lift is item 2.

**Step 4: Final Answer:**

The correct sequence is 3, 1, 2, that is back blows, chest thrust, then tongue-jaw lift.

**3, 1, 2**

**Quick Tip:** Infants never get abdominal thrusts; the order is back blows, then chest thrusts, then look in the mouth.

• • •

**120.** Regarding simple febrile seizure, which one of the following statements is NOT correct?

- (A) It is usually seen in children between 6 months and 6 years of age.
- (B) The seizure usually lasts for less than 15 minutes.
- (C) Rectal diazepam given at the onset of febrile illness can reduce the incidence of recurrent febrile seizure.
- (D) Oral phenobarbitone is usually prescribed after the first episode of seizure to prevent recurrences.

**Correct Answer:** (D) Oral phenobarbitone is usually prescribed after the first episode of seizure to prevent recurrences.

**SOLUTION:**

Simple febrile seizure is a well defined entity in pediatrics, with a fixed set of features. Let's check each statement against those features.

1. **Age 6 months to 6 years:** this is exactly the accepted age window for simple febrile seizures, so the statement is correct.
2. **Lasts less than 15 minutes:** duration under 15 minutes, with no recurrence in the same illness, is part of the very definition of a simple febrile seizure, so this statement is correct too.
3. **Rectal diazepam at onset of fever reduces recurrence:** giving diazepam through the febrile illness is an established way to cut the chance of another seizure during that same illness, so this statement is correct.
4. **Oral phenobarbitone routinely started after the first episode:** this is not standard practice. A single simple febrile seizure is benign, and phenobarbitone brings real side effects such as irritability and effects on learning, so doctors do not routinely start it after just one episode.

Since the first three statements match accepted teaching and only the phenobarbitone statement goes against it, that is the one that is NOT correct.

Let's summarize:

- Age range 6 months to 6 years and duration under 15 minutes both define a simple febrile seizure.
- Rectal diazepam during a febrile illness is an accepted way to reduce recurrence in that illness.

- Routine oral phenobarbitone after just one simple febrile seizure is not standard practice.

So the incorrect statement is the one about routinely giving oral phenobarbitone after the first episode.

**Quick Tip:** Routine long term anticonvulsant prophylaxis is not started after just one simple febrile seizure.

• • •

**121.** Diarrhea-related hemolytic uremic syndrome is characterized by all of the following, EXCEPT

- (A) Acute renal failure
- (B) Coombs' positive hemolytic anemia
- (C) Thrombocytopenia
- (D) Neutrophilic leukocytosis

**Correct Answer:** (B) Coombs' positive hemolytic anemia

**SOLUTION:**

This question checks the classic triad of hemolytic uremic syndrome (HUS), the illness that often follows a diarrheal infection caused by Shiga toxin producing bacteria. Let's go through each option one by one.

1. **Acute renal failure:** This is one of the three core features of HUS. Tiny clots form in the small vessels of the glomeruli and choke off blood flow to the kidney.
2. **Coombs' positive hemolytic anemia:** This one does not belong. HUS destroys red cells by physically shredding them as

they squeeze past vessels packed with platelet clots, so the Coombs test, which picks up antibody sitting on the red cell, stays negative.

3. **Thrombocytopenia:** Platelets get consumed while building the small clots inside injured vessels, so a low platelet count is expected and forms part of the triad.
4. **Neutrophilic leukocytosis:** A rise in neutrophil count is a common lab finding seen during the acute stage of the disease.

Three of the four options are genuine features of HUS, so the odd one out is the Coombs positive finding, because the hemolysis in HUS is mechanical and not antibody driven.

Let's summarize:

- HUS shows a triad of hemolytic anemia, thrombocytopenia, and acute renal failure.
- The hemolysis is microangiopathic and Coombs negative, never Coombs positive.

So the finding that does not belong with HUS is Coombs' positive hemolytic anemia.

**Quick Tip:** Ask whether the red cell breakdown in HUS is antibody driven or purely mechanical.

• • •

**122.** An 11-year old girl presents with severe hypertension.

Ultrasonography shows a small sized left kidney. The DTPA radionuclide scan shows reduced function in this kidney that further declines following oral administration of enalapril. What is the most appropriate investigation that is required?

- (A) Renal biopsy
- (B) Intravenous pyelogram
- (C) Arterial angiography
- (D) Micturating cystourethrogram

**Correct Answer:** (C) Arterial angiography

**SOLUTION:**

This case describes a child with severe hypertension, a small kidney on one side, and a renogram that worsens after an ACE inhibitor is given. Let's check each option against this picture.

1. **Renal biopsy:** A biopsy tells us about tissue damage inside the kidney but cannot show whether the renal artery itself is narrowed, so it will not answer the real question here.
2. **Intravenous pyelogram:** This older test outlines the collecting system and is a poor tool for spotting a narrowed renal artery, so it falls short.
3. **Arterial angiography:** The ACE inhibitor challenge worsening kidney function is the textbook sign of renal artery stenosis, since the kidney was relying on angiotensin II to keep filtering. Angiography is the test that actually shows the narrowed vessel and confirms the diagnosis.
4. **Micturating cystourethrogram:** This test is meant for reflux of urine from the bladder into the ureters or for posterior urethral valves, which does not fit a small kidney with a positive ACE inhibitor challenge.

The clue of worsening function after enalapril points straight to renal artery stenosis, and the test that confirms this by showing the vessel is angiography.

Let's summarize:

- An ACE inhibitor challenge that drops kidney function signals renal artery stenosis.
- Angiography visualizes the artery directly and is the confirmatory test.

So the correct investigation here is arterial angiography.

**Quick Tip:** A falling captopril or enalapril renogram is the classic clue for renal artery stenosis.

• • •

**123.** Erythrocyte Sedimentation Rate is zero in

- (A) Abetalipoproteinemia
- (B) Afibrinogenemia
- (C) Asplenia
- (D) Aplastic anemia

**Correct Answer:** (B) Afibrinogenemia

**SOLUTION:**

The ESR depends entirely on red cells clumping into rouleaux, and rouleaux formation needs fibrinogen in the plasma. Keeping this in mind, let's look at each option.

1. **Abetalipoproteinemia:** Here red cells become spiky acanthocytes because of abnormal lipid handling. This odd shape can reduce ESR a bit, but fibrinogen is still present, so ESR does not fall to zero.

2. **Afibrinogenemia:** In this rare inherited disorder, the plasma has almost no fibrinogen at all. Without fibrinogen there is nothing to glue red cells into stacks, so rouleaux cannot form and ESR reads as zero regardless of any inflammation.
3. **Asplenia:** Removing or losing the spleen changes red cell shape by allowing Howell Jolly bodies and target cells to persist, but plasma fibrinogen is unaffected, so ESR stays normal or can even rise.
4. **Aplastic anemia:** Bone marrow failure lowers the red cell count. Fewer red cells actually settle faster because there is less crowding, so ESR tends to go up here, not down to zero.

Since fibrinogen is completely missing only in afibrinogenemia, that is the one condition where rouleaux cannot form at all and ESR becomes zero.

Let's summarize:

- Rouleaux formation, and therefore ESR, depends on plasma fibrinogen.
- Total absence of fibrinogen is the only situation among these options that drops ESR to zero.

So the condition with a zero ESR is afibrinogenemia.

**Quick Tip:** Think about what protein is needed for red cells to stack into rouleaux.



**124.** Infant born to a diabetic mother is at risk for all of the following, EXCEPT

- (A) Neonatal hepatitis
- (B) Polycythemia
- (C) Hypoglycemia
- (D) Congenital malformations

**Correct Answer:** (A) Neonatal hepatitis

**SOLUTION:**

An infant of a diabetic mother deals with the after effects of high fetal insulin caused by high maternal sugars crossing the placenta. Let's use that idea to check each option.

1. **Neonatal hepatitis:** This liver condition is usually tied to infections or inborn metabolic disease of the liver, and it has no real link to a mother's diabetes, so it does not belong on this list.
2. **Polycythemia:** Ongoing mild fetal oxygen shortage plus high insulin push the fetus to make extra red cells, so a raised red cell count is a genuine and common finding in these babies.
3. **Hypoglycemia:** This is the hallmark problem. The baby's pancreas is used to making extra insulin to handle the mother's sugar, so once born and cut off from that sugar supply, the blood sugar can crash quickly.
4. **Congenital malformations:** When sugar control is poor early in pregnancy, the developing organs, especially the heart and spine, are more likely to form incorrectly, so malformation risk is genuinely higher.

Three of these four options connect directly to high maternal glucose and fetal hyperinsulinism, but neonatal hepatitis stands apart with no such link.

Let's summarize:

- Fetal hyperinsulinism explains hypoglycemia, polycythemia, and a higher malformation rate in an IDM.
- Neonatal hepatitis is not part of this pattern and is caused by unrelated factors.

So the condition that is not a risk here is neonatal hepatitis.

**Quick Tip:** Think about which of these problems actually traces back to fetal hyperinsulinism.

• • •

**125.** Which one of the following is NOT associated with Cephalhematoma?

- (A) Swelling is present at birth
- (B) Usually involves parietal and occipital bone
- (C) Bleeding is subperiosteal
- (D) Usually reabsorbed in 2-3 months

**Correct Answer:** (B) Usually involves parietal and occipital bone

**SOLUTION:**

A cephalhematoma is a pool of blood trapped under the periosteum of a single skull bone after birth trauma. Since the periosteum is glued down tight at every suture line, the swelling cannot spread past a suture. Let's use this to check each option.

1. **Swelling is present at birth:** This matches the usual clinical picture of a cephalhematoma being noticed as a lump on the scalp.

2. **Usually involves parietal and occipital bone:** This does not fit. The bleeding is trapped by the suture line, so it almost always stays within one single bone, usually just one parietal bone, rather than spreading across the parietal and occipital bones together.
3. **Bleeding is subperiosteal:** This is exactly what defines a cephalhematoma, blood collecting between the bone and its covering periosteum.
4. **Usually reabsorbed in 2-3 months:** This matches the typical slow natural resolution of this swelling as the trapped blood gets reabsorbed.

Because the suture line always confines the bleeding to one bone, saying it usually involves two bones together does not fit the known behavior of a cephalhematoma.

Let's summarize:

- A cephalhematoma stays confined by the suture line and does not cross it.
- It is normally limited to one single bone, not spread across the parietal and occipital bones.

So the statement not associated with cephalhematoma is that it usually involves the parietal and occipital bone together.

**Quick Tip:** Remember that a cephalhematoma is blocked by the suture line and stays within one bone.



**126.** A girl can walk upstairs, alternating feet, and make a tower of 8 cubes. She refers to herself by the pronoun 'I', knows her name, but not her age and gender. The most likely chronological age is

- (A) 24 months
- (B) 30 months
- (C) 36 months
- (D) 42 months

**Correct Answer:** (B) 30 months

**SOLUTION:**

This question wants us to line up a cluster of skills with the right point on a developmental timeline. Let's look at each age option in turn.

1. **24 months:** At this age a toddler usually climbs stairs one step at a time while holding a rail, without swapping feet, and can only stack about 6 to 7 cubes. Since our child already alternates feet and stacks 8 cubes, she has moved past this stage.
2. **30 months:** Here children start alternating feet going upstairs, though downstairs still needs both feet per step, can build a tower of roughly 8 cubes, and begin using pronouns such as I, me, and you. This lines up closely with the child in the question, who alternates feet upstairs, stacks 8 cubes, and calls herself 'I'.
3. **36 months:** By this age children alternate feet both up and down stairs, and crucially they now know their own age and gender. Our child does not yet know these two things, so she has not reached this stage.
4. **42 months:** This stage builds further on 36 month skills, so it fits even less well, since our child is missing milestones that appear earlier at 36 months.

The skills she has already gained point past 24 months, and the skills she is still missing, knowing her age and gender, rule out 36 and 42 months. That leaves the 30 month stage as the best match.

Let's summarize:

- Alternating feet upstairs and an 8 cube tower appear around 30 months.
- Knowing one's own age and gender is a 36 month milestone, which this child has not reached.

So the most likely chronological age of this child is 30 months.

**Quick Tip:** Notice which skills she already has and which ones, like knowing her age and gender, she has not reached yet.

• • •

**127. Passage:** A one and a half year old girl, fed mostly on dilute cow's milk, develops diarrhea that persists for 10 days. This is followed by swelling on her feet.

The likely diagnosis is

- (A) Kwashiorkor
- (B) Acute renal failure
- (C) Congestive cardiac failure
- (D) Indian childhood cirrhosis

**Correct Answer:** (A) Kwashiorkor

**SOLUTION:**

The clue here is the diet: dilute cow's milk is watered down and gives very little protein, even if some calories are supplied. Let's check what this diet leads to against each option.

1. **Kwashiorkor:** A diet short on protein lowers blood albumin. Low albumin lets fluid leak out of blood vessels into the tissues, which shows up as swelling, classically starting at the feet. Long diarrhea on top of this makes protein loss even worse. This matches the case closely.
2. **Acute renal failure:** This would be expected to show reduced urine output and deranged kidney blood tests, which are not mentioned, so it does not fit as well.
3. **Congestive cardiac failure:** This usually comes with fast breathing, a rapid pulse, and liver enlargement, none of which appear in this history.
4. **Indian childhood cirrhosis:** This liver disease is tied to high copper intake, often from copper or brass utensils, and shows up with liver enlargement and jaundice rather than a story of dilute milk feeding.

The combination of a protein poor milk diet, long diarrhea, and feet swelling from low albumin points squarely at Kwashiorkor.

Let's summarize:

- Dilute cow's milk is low in protein even when calories are near normal.
- Low protein leads to low albumin, and low albumin causes the fluid to leak out as edema.

So the likely diagnosis in this child is Kwashiorkor.

**Quick Tip:** Think about what a diet of watered down milk is missing, and what low albumin does to fluid balance.

• • •

**128. Passage:** A one and a half year old girl, fed mostly on dilute cow's milk, develops diarrhea that persists for 10 days. This is followed by swelling on her feet, and the likely diagnosis is Kwashiorkor.

One life-threatening complication of this condition is

- (A) Hyperkalemia
- (B) Hyponatremia
- (C) Metabolic acidosis
- (D) Hypoglycaemia

**Correct Answer:** (C) Metabolic acidosis

**SOLUTION:**

This child has Kwashiorkor plus 10 days of diarrhea, a combination that puts real strain on the body's fluid and acid base balance. Let's weigh each option against that background.

1. **Hyperkalemia:** Diarrhea typically drains potassium out of the body through the stool, so these children usually trend toward low potassium, not high, making this an unlikely fit.
2. **Hyponatremia:** Prolonged diarrhea washes out both water and salt, and malnourished children commonly end up with low or near normal sodium rather than an excess, so this does not match well either.

3. **Metabolic acidosis:** Stool from long standing diarrhea carries away large amounts of bicarbonate, and a malnourished body has little reserve left to buffer or correct this loss. The combined effect is a build up of acid in the blood, which is exactly why this complication is highlighted in management guidelines for severe malnutrition.
4. **Hypoglycaemia:** This is a genuine risk in malnourished children too, since their glycogen stores run low, but the specific clue of ten days of ongoing diarrhea in this case points more directly at bicarbonate loss and acidosis as the complication being tested.

Given the heavy bicarbonate loss from prolonged diarrhea layered on top of a malnourished child's weak buffering capacity, metabolic acidosis is the complication that fits best.

Let's summarize:

- Long diarrhea drains bicarbonate from the gut.
- A malnourished child cannot buffer this loss well, so acid builds up in the blood.

So the life threatening complication here is metabolic acidosis.

**Quick Tip:** Think about what 10 days of diarrhea does to the body's bicarbonate and acid base balance.

• • •

**129.** A one and a half year old girl child, fed mostly on dilute cow's milk, develops diarrhea that continues for 10 days. She then develops swelling of both feet, and the picture is diagnosed as kwashiorkor. The most important aspect of her management is

- (A) Diuretics
- (B) Fluid restriction
- (C) Diet with adequate calories and protein
- (D) Potassium restriction

**Correct Answer:** (C) Diet with adequate calories and protein

**SOLUTION:**

This case describes a toddler who was mainly fed dilute cow's milk, which is low in protein for her needs. She then has diarrhea for 10 days and swelling in both feet. Swollen feet in a malnourished child points to low blood protein, and together with the poor diet history this fits kwashiorkor, a type of severe malnutrition where protein intake is far short of what the body needs even though calorie intake may look near normal.

1. **Diuretics:** The swelling is caused by low albumin pulling fluid into the tissues, not by the body holding excess fluid. Giving diuretics would strip away fluid and electrolytes from an already depleted child and would not treat the underlying protein shortage.
2. **Fluid restriction:** There is no fluid overload to treat here. Restricting fluids does not add the protein and calories the child is missing, and could add to the risk of dehydration from ongoing diarrhea.
3. **Diet with adequate calories and protein:** This treats the actual cause of the illness. Feeding is built up gradually with enough energy and good quality protein so the body can rebuild muscle, replace albumin, and clear the edema over time.

4. **Potassium restriction:** Malnourished children like this one are usually short of potassium, not excess in it, because of poor intake and ongoing diarrhea losses. Restricting potassium further would only add harm.

The correct step is feeding the child a diet with enough calories and protein, since this addresses the actual deficiency driving the illness and the edema.

Let's summarize:

- A toddler on dilute cow's milk with diarrhea and foot swelling points to kwashiorkor.
- The edema comes from low protein, not fluid excess, so diuretics and fluid restriction do not help.
- These children are usually potassium deficient, so restricting potassium is wrong.
- Correcting the protein and calorie deficit through diet is the key management step.

So the most important part of management is a diet with adequate calories and protein.

**Quick Tip:** Think about what is actually missing in a child fed only dilute cow's milk.

• • •

**130.** Consider the following statements about breath-holding spells in children:

1. They are usually preceded by minor trauma.
2. The child stops breathing and becomes cyanosed.

3. The child suddenly becomes pale and limp.
4. Frequency becomes less with zinc supplementation.

Which of the above statements are correct?

- (A) 1, 2 and 3
- (B) 1 and 2
- (C) 2, 3 and 4
- (D) 1, 3 and 4

**Correct Answer:** (A) 1, 2 and 3

**SOLUTION:**

Breath-holding spells are a common toddler problem with two clear patterns, and the question gives four claims about them that need to be checked one by one.

1. **Preceded by minor trauma:** True. A small fall, bump, or fright is a common trigger for both the cyanotic and the pallid type of spell.
2. **Child stops breathing and is cyanosed:** True. This describes the cyanotic form, where the child cries hard, holds the breath at the end of expiration, and turns blue.
3. **Child becomes suddenly pale and limp:** True. This describes the pallid form, where a brief vagal-mediated slowing of the heart makes the child go white and floppy, often with little or no crying first.
4. **Frequency becomes less on zinc supplementation:** False. The known link is with iron deficiency anemia, and it is iron therapy that has been shown to cut down how often these spells occur, not zinc.

Since the first three claims match the known features of breath-holding spells and the fourth does not, the correct combination is 1, 2 and 3.

Let's summarize:

- Breath-holding spells have a cyanotic form (breath-holding and blueness) and a pallid form (sudden pallor and limpness).
- Minor trauma or fright is a common trigger for both forms.
- Iron deficiency is the linked nutritional cause, and iron therapy, not zinc, reduces spell frequency.

So the correct answer is statements 1, 2 and 3.

**Quick Tip:** Recall that breath-holding spells come in a blue type and a pale type, and think about which mineral deficiency they are linked to.

• • •

**131.** In which one of the following conditions can dactylitis NOT be seen?

- (A) Sickle-cell anemia
- (B) Beta thalassemia
- (C) Congenital syphilis
- (D) Tuberculosis

**Correct Answer:** (B) Beta thalassemia

**SOLUTION:**

Dactylitis is painful swelling of a finger or toe, caused by inflammation or bone changes in that digit. The question asks which of four conditions does not cause this.

1. **Sickle-cell anemia:** Causes hand-foot syndrome, where sickled cells block tiny vessels in the bones of the hands and feet, leading to painful swelling. This is a well known early sign in affected infants and toddlers.
2. **Beta thalassemia:** Leads to marrow expansion and skull or facial bone changes from chronic anemia, but it does not produce swelling of individual fingers or toes. Dactylitis is not part of its typical picture.
3. **Congenital syphilis:** Can inflame the periosteum of the small bones of the hands, giving a form of dactylitis with symmetrical finger swelling.
4. **Tuberculosis:** Can infect small hand bones and produce a cystic, swollen digit known as tuberculous dactylitis or spina ventosa.

Three of the four conditions, sickle-cell anemia, congenital syphilis, and tuberculosis, are linked to dactylitis. Beta thalassemia is the one that is not.

Let's summarize:

- Dactylitis means painful digit swelling from bone or soft tissue involvement.
- Sickle-cell disease, congenital syphilis, and tuberculosis are all known causes.
- Beta thalassemia affects the marrow and skull, not individual digits.

So the answer is beta thalassemia.

**Quick Tip:** Think of hand-foot syndrome and which disease mainly affects the skull and long bones instead of the digits.

**132.** Spleen is palpable in all haemolytic anemias in a child of 8 years of age, EXCEPT in

- (A) Thalassemia
- (B) Spherocytosis
- (C) Sickle-cell anemia
- (D) Haemolysis in malaria

**Correct Answer:** (C) Sickle-cell anemia

**SOLUTION:**

Chronic hemolytic anemias usually make the spleen work harder to clear damaged red cells, and this often makes the spleen big enough to feel. The question asks which of four hemolytic conditions is the exception in an 8 year old.

1. **Thalassemia:** Ongoing red cell destruction and compensatory blood formation in the spleen keep it enlarged and palpable through childhood.
2. **Spherocytosis:** The abnormally shaped, fragile red cells get trapped and broken down in the spleen, so an enlarged, palpable spleen is a classic finding.
3. **Sickle-cell anemia:** Sickled cells repeatedly block the small vessels inside the spleen, causing small infarcts from early infancy onward. By about 8 years of age, this process has usually destroyed and shrunk the spleen so much, called autosplenectomy, that it is no longer felt on exam, even though hemolysis continues.
4. **Haemolysis in malaria:** Red cell destruction from malaria triggers reactive spleen enlargement, so the spleen is usually

palpable.

Three of these conditions keep an enlarged, palpable spleen, but sickle-cell anemia is different because repeated infarcts scar the spleen down over time.

Let's summarize:

- Most chronic hemolytic anemias cause splenomegaly from extra workload on the spleen.
- Sickle-cell disease instead damages and shrinks the spleen through repeated infarcts.
- By 8 years, most sickle-cell patients have undergone autosplenectomy, so the spleen is not felt.

So the exception is sickle-cell anemia.

**Quick Tip:** Think about autosplenectomy and at what age it typically happens in sickle-cell disease.

• • •

**133.** Which one of the following is NOT a live vaccine?

- (A) OPV
- (B) BCG
- (C) Hib vaccine
- (D) Ty 21a against Typhoid

**Correct Answer:** (C) Hib vaccine

**SOLUTION:**

Live vaccines contain a weakened but still living form of the organism, while other vaccine types use only a piece of the organism, like a polysaccharide or protein, with nothing alive in the shot.

1. **OPV:** Made from live, weakened poliovirus, so it is a live vaccine.
2. **BCG:** Made from a live, weakened strain of *Mycobacterium bovis*, so it is a live vaccine.
3. **Hib vaccine:** Built from the capsular polysaccharide of *Haemophilus influenzae* type b, usually joined to a carrier protein. There is no living organism in it at all, so it is a conjugate (subunit) vaccine, not live.
4. **Ty21a against typhoid:** An oral vaccine made from a live, weakened strain of *Salmonella typhi*, so it is live too.

Three of the four options use a living, weakened organism. The Hib vaccine instead uses just a piece of the bacterium's surface, so it stands apart as the non-live one.

Let's summarize:

- OPV, BCG, and Ty21a are all live attenuated vaccines.
- The Hib vaccine is a polysaccharide-protein conjugate vaccine with no live organism.

So the vaccine that is not live is the Hib vaccine.

**Quick Tip:** Ask which of these four is made only from a piece of the bacteria's surface, not a weakened living germ.

• • •

**134.** Maternal mortality is defined as number of maternal deaths per

- (A) 1000 live births
- (B) 10,000 live births
- (C) 1,00,000 live births
- (D) 1,00,000 pregnancies

**Correct Answer:** (A) 1000 live births

**SOLUTION:**

This question is about how maternal mortality is measured, and there are two related terms worth separating clearly: a rate and a ratio.

1. **1000 live births:** This matches the Maternal Mortality Rate as defined in standard Indian preventive and social medicine textbooks, where maternal deaths in a year are divided by live births in that year and expressed per 1000.
2. **10,000 live births:** Not the standard denominator used for this measure in either the Indian textbook definition or the international one.
3. **1,00,000 live births:** This is the denominator used by the World Health Organization for the Maternal Mortality Ratio, which is the figure commonly seen in global reports, but it is a different named measure from the rate this question is testing.
4. **1,00,000 pregnancies:** Maternal mortality figures are conventionally based on live births, not total pregnancies, so this denominator does not match the standard definition.

Based on the textbook definition of maternal mortality rate used for this question, the deaths are expressed per 1000 live births.

Let's summarize:

- Maternal Mortality Rate (Indian PSM textbook definition): deaths per 1000 live births.
- Maternal Mortality Ratio (WHO/international): deaths per 100,000 live births.
- This question follows the rate definition, so the answer is 1000 live births.

So maternal mortality here is defined as deaths per 1000 live births.

**Quick Tip:** Note this question uses the Indian textbook rate definition, not the WHO ratio figure per 100,000.

...

**135.** Umbilical cord has

- (A) two arteries and one vein
- (B) two veins and one artery
- (C) one vein and one artery
- (D) two arteries and two veins

**Correct Answer:** (A) two arteries and one vein

**SOLUTION:**

The umbilical cord links the baby to the placenta and normally contains three blood vessels set in a soft protective jelly.

1. **Two arteries and one vein:** This is the normal pattern. The two arteries carry blood low in oxygen from the baby toward the placenta, and the single vein carries oxygen and nutrient rich blood back to the baby.

2. **Two veins and one artery:** This does not match normal cord anatomy, which has only one vein.
3. **One vein and one artery:** A cord with only one artery is an abnormal finding called a single umbilical artery, and it is linked with a higher chance of other birth defects, which is why it is checked for after delivery.
4. **Two arteries and two veins:** This does not match the normal three vessel pattern of the cord.

The umbilical cord normally carries two arteries and one vein, so this is the correct choice.

Let's summarize:

- The umbilical cord has three vessels: two arteries and one vein.
- The arteries carry blood from the baby to the placenta, the vein carries blood back to the baby.
- A single artery cord is abnormal and prompts a search for other defects.

So the umbilical cord has two arteries and one vein.

**Quick Tip:** Remember the cord has three vessels in total, not four.

• • •

**136.** Deep vein thrombosis is more common in the left leg because

- (A) of dextrorotation of uterus
- (B) the left common iliac vein is more tortuous
- (C) inferior vena cava is on right side
- (D) left ovarian artery is a branch of aorta

**Correct Answer:** (A) of dextrorotation of uterus

**SOLUTION:**

Deep vein thrombosis during pregnancy has a clear left-sided preference, and this comes down to how the pelvic blood vessels sit and how the uterus grows.

1. **Dextrorotation of the uterus:** As the uterus enlarges in pregnancy, it usually rotates toward the right. This extra rotation presses the uterus against the left common iliac vein, adding to the compression it already gets from the right common iliac artery crossing over it, which slows blood return from the left leg and favors clot formation there.
2. **Left common iliac vein is more tortuous:** There is no such inherent extra twisting of this vein compared to the right side, so this is not the real reason.
3. **Inferior vena cava is on the right side:** This is correct anatomy, but on its own it does not explain why the left leg specifically gets more clots.
4. **Left ovarian artery is a branch of the aorta:** This is also a true fact about pelvic anatomy, but it concerns arterial supply, not venous compression, so it does not explain the left leg pattern.

The compression from the crossing right common iliac artery, made worse by the uterus turning to the right in pregnancy, is what explains the higher rate of left leg DVT.

Let's summarize:

- The right common iliac artery normally crosses over the left common iliac vein.

- Dextrorotation of the pregnant uterus adds more pressure on this already crossed left vein.
- The other three options describe true facts that are not the direct cause of left-sided DVT.

So DVT is more common in the left leg because of dextrorotation of the uterus.

**Quick Tip:** Think about which direction the pregnant uterus usually rotates and which vein that puts pressure on.

• • •

**137.** Which one of the following parameters is NOT necessary for monitoring during magnesium sulphate therapy for eclampsia?

- (A) Central venous pressure
- (B) Respiratory rate
- (C) Patellar reflex
- (D) Urinary output

**Correct Answer:** (A) Central venous pressure

**SOLUTION:**

Magnesium sulphate is given in eclampsia to stop and prevent fits, but the gap between a working dose and a toxic dose is small. Because of this, three bedside checks are done before every repeat dose and through the infusion.

1. **Central venous pressure:** This number tells us about vein filling and heart preload. It plays no part in spotting magnesium toxicity, so it is not part of the standard checklist for this drug.

2. **Respiratory rate:** As magnesium rises above the safe range, breathing slows down. A rate under 12 to 14 breaths a minute signals toxicity, so this is checked often.
3. **Patellar reflex:** The knee jerk fades before any other sign of toxicity appears. Checking it before each dose is the single most useful bedside test.
4. **Urinary output:** The kidney is the only way magnesium leaves the body. Output under 25 to 30 mL an hour warns that the drug is building up, so hourly urine measurement is required.

The three checks that truly matter here are the knee reflex, the breathing rate, and the urine output. Central venous pressure belongs to fluid management, not magnesium safety, so it is the one that is not necessary.

Let's summarize:

- Magnesium toxicity progresses in order: reflex loss, then slow breathing, then cardiac effects.
- Reflex, respiration, and urine output form the standard monitoring triad; central venous pressure does not.

So the parameter that is not necessary for monitoring magnesium sulphate therapy is central venous pressure.

**Quick Tip:** Think about what the body needs to clear magnesium and what early toxicity looks like.



**138.** A case of eclampsia is brought to a primary health centre late in the night. The decision is to

- (A) Tell the relatives to take her to the referral hospital immediately
- (B) Give 10 mg Calmpose (diazepam) IV and ask the relatives to take her to a higher centre
- (C) Give 10 mg Calmpose IV, induce labor and wait for transport
- (D) Give anticonvulsants, inform the higher centre and wait for transport

**Correct Answer:** (B) Give 10 mg Calmpose (diazepam) IV and ask the relatives to take her to a higher centre

**SOLUTION:**

This question tests what a primary health centre should do first when eclampsia walks through the door at night, when a full obstetric team is not available.

1. **Refer immediately without treatment:** Sending the patient off with no drug on board risks another convulsion on the road, which can be fatal for mother and baby.
2. **Give IV diazepam and refer:** This stops the current fit fast and covers the transfer window, then hands the case to a centre equipped to manage eclampsia fully.
3. **Give diazepam, induce labor, and wait:** Starting labor at a facility without operative backup is unsafe if complications appear during delivery.
4. **Give anticonvulsants and wait for transport at the PHC:** This delays reaching proper care and keeps the patient where monitoring is limited.

The safest and most practical step is to sedate with IV diazepam right away and arrange transfer without delay, since it protects the patient during the journey while getting her to a facility that can manage the rest of the labor and delivery.

Let's summarize:

- A PHC's job in eclampsia is to control the fit, not to complete the delivery.
- IV diazepam buys safe time for transfer to a higher centre.

So the correct decision is to give 10 mg Calmpose IV and send the patient to a higher centre.

**Quick Tip:** Control the fit first, then move her, not just refer or just wait.

• • •

### 139. Anti-thrombin III levels in disseminated intravascular coagulation

- (A) Are decreased
- (B) Are increased
- (C) Remain the same
- (D) Are variable

**Correct Answer:** (A) Are decreased

#### **SOLUTION:**

Disseminated intravascular coagulation (DIC) is a state where clotting is switched on throughout the small blood vessels, and this question asks what happens to antithrombin III, the body's natural anticlotting protein, during that process.

1. **Decreased:** Antithrombin III gets used up as it tries to block the flood of thrombin being formed everywhere in DIC, so its blood level drops. This matches the consumption pattern seen with platelets and fibrinogen in DIC.

2. **Increased:** There is no mechanism in DIC that would raise antithrombin III; the process only consumes clotting factors and their inhibitors.
3. **Remain the same:** This ignores the ongoing consumption that defines DIC, so the level cannot stay unchanged.
4. **Variable:** This is too vague. The change is consistently in one direction, downward, not unpredictable.

Since antithrombin III is being consumed alongside other clotting factors as the body tries to control widespread clotting, its level falls in DIC, just like fibrinogen and platelet counts do.

Let's summarize:

- DIC causes consumption of clotting factors, platelets, and their natural inhibitors together.
- A falling antithrombin III level supports the diagnosis of DIC.

So the correct answer is that antithrombin III levels are decreased in disseminated intravascular coagulation.

**Quick Tip:** Think about what happens to any clotting inhibitor when clotting runs out of control everywhere.

• • •

**140.** Hydramnios is diagnosed by ultrasound by all of the following, EXCEPT

- (A) Single vertical pocket more than 8 cm
- (B) Single vertical pocket more than 5 cm
- (C) Amniotic fluid index more than 24 cm
- (D) Subjective assessment

**Correct Answer:** (D) Subjective assessment

**SOLUTION:**

This question checks which methods are actually used to call a pregnancy hydramnios on ultrasound, and which one is not a real diagnostic yardstick.

1. **Single vertical pocket more than 8 cm:** This is the standard, widely used cutoff for the deepest pocket method. It gives one fixed number that anyone can measure and compare.
2. **Single vertical pocket more than 5 cm:** This lower cutoff is also used in some classifications to flag increased fluid, and it is still a measured pocket depth, so it counts as an objective method.
3. **Amniotic fluid index more than 24 cm:** This is the four quadrant sum method, another standard, reproducible measurement used to define hydramnios.
4. **Subjective assessment:** This means simply looking at the scan and judging that there seems to be too much fluid. It gives no fixed cutoff, depends on who is looking, and is not a defined diagnostic criterion the way a measured number is.

The pocket depth methods and the amniotic fluid index all give a specific number to test against a cutoff, so they count as genuine diagnostic tools. A subjective visual impression does not meet that bar.

Let's summarize:

- Deepest pocket and amniotic fluid index are measured, number based diagnostic criteria.

- Subjective assessment is an impression, not a defined measurement.

So the one that is not used to formally diagnose hydramnios on ultrasound is subjective assessment.

**Quick Tip:** Ask which of the four choices gives a fixed, measurable number and which one does not.

• • •

**141.** Which one of the following endometrial histopathological findings is suggestive of an ectopic pregnancy?

- (A) Decidual reaction
- (B) Chorionic villi
- (C) Proliferative endometrium
- (D) Secretory endometrium

**Correct Answer:** (A) Decidual reaction

**SOLUTION:**

This question is about the biopsy pattern that hints at a pregnancy sitting outside the uterus rather than inside it.

1. **Decidual reaction:** Pregnancy hormones convert the endometrium into decidua wherever the embryo actually is. When the sample shows decidua but no villi, it means the pregnancy hormones are active but the pregnancy tissue itself is not in the uterus, which is exactly what happens in an ectopic pregnancy.

2. **Chorionic villi:** Finding villi in the sample means the placenta has formed inside the uterine cavity, so this confirms an intrauterine pregnancy, not an ectopic one.
3. **Proliferative endometrium:** This is the normal estrogen driven pattern seen before ovulation in a non pregnant cycle and has no special link to ectopic pregnancy.
4. **Secretory endometrium:** This is the normal progesterone driven pattern after ovulation and is seen in many non pregnant cycles too, so it does not point specifically to an ectopic pregnancy.

The telling combination is decidua present with villi absent, since it shows the hormones of pregnancy are working on the uterine lining while the pregnancy itself has implanted somewhere else.

Let's summarize:

- Villi in the sample means intrauterine pregnancy.
- Decidua without villi is the classic sign pointing to ectopic pregnancy.

So the finding suggestive of ectopic pregnancy is decidual reaction without chorionic villi.

**Quick Tip:** Look for decidua without any villi, that gap is the clue.

• • •

**142.** Deep vein thrombosis in pregnancy is best treated by

- (A) Heparin in the 1st trimester and warfarin in the 2nd and 3rd trimesters
- (B) Warfarin in all trimesters
- (C) Heparin in all trimesters
- (D) Heparin in the 1st and 2nd trimesters and warfarin in the 3rd trimester

**Correct Answer:** (A) Heparin in the 1st trimester and warfarin in the 2nd and 3rd trimesters

**SOLUTION:**

This question is about timing anticoagulant drugs correctly across the three trimesters of pregnancy to protect the developing fetus while still treating the clot.

1. **Heparin in the 1st trimester, warfarin in the 2nd and 3rd:** Heparin does not cross the placenta, so it protects the fetus during the organ forming weeks of the first trimester. Warfarin is then used later, once past the window where it would cause warfarin embryopathy, such as nasal hypoplasia and abnormal bone stippling.
2. **Warfarin in all trimesters:** This leaves the fetus exposed to warfarin during the first trimester organ forming period, risking embryopathy, so it is not the safest choice.
3. **Heparin in all trimesters:** This avoids fetal drug exposure completely and is increasingly favored in modern practice for treating DVT in pregnancy, but the classic teaching point in this question is the stepwise heparin to warfarin switch.
4. **Heparin in the 1st and 2nd trimesters, warfarin only in the 3rd:** This does not fit the standard reasoning, since the

concern in the third trimester is warfarin's effect on fetal and neonatal bleeding around the time of delivery, which is exactly when it should be avoided rather than started.

The classic stepwise answer keeps the fetus away from warfarin exactly in the first trimester, when the embryopathy risk is highest, then allows warfarin afterward.

Let's summarize:

- Warfarin is avoided in the first trimester because it can cause embryopathy.
- Heparin is the safe substitute early in pregnancy since it does not cross the placenta.

So the answer taught for this question is heparin in the first trimester followed by warfarin in the second and third trimesters.

**Quick Tip:** Remember which drug crosses the placenta and when the embryopathy risk is highest.

• • •

**143.** The following are the characteristics of caput succedaneum, EXCEPT

- (A) It is present at birth
- (B) It does not cause jaundice in the newborn
- (C) It is limited to an individual bone
- (D) It disappears within a few hours of birth

**Correct Answer:** (C) It is limited to an individual bone

**SOLUTION:**

This question separates the features of caput succedaneum from those of cephalhematoma, its look alike on a newborn's scalp.

1. **Present at birth:** Caput forms from pressure during labor and delivery, so it is already there when the baby is born. This is a true feature.
2. **Does not cause jaundice:** Since caput is fluid in the soft tissue rather than trapped blood, there is no extra breakdown of blood cells to raise bilirubin, so it does not cause jaundice. This is a true feature.
3. **Limited to an individual bone:** This actually describes cephalhematoma, where bleeding sits under the periosteum and cannot cross a suture line. Caput sits above the periosteum and freely crosses sutures, so it is not limited to one bone. This statement is false for caput succedaneum.
4. **Disappears within a few hours of birth:** Caput resolves quickly, usually within hours to a couple of days, much faster than cephalhematoma. This is a true feature.

Three of the four statements correctly describe caput succedaneum. Only the claim about being limited to one bone is wrong, since that boundary behavior belongs to cephalhematoma instead.

Let's summarize:

- Caput succedaneum lies above the periosteum and can cross suture lines.
- Cephalhematoma lies below the periosteum and stays within one bone.

So the exception here, the feature that does not fit caput succedaneum, is being limited to an individual bone.

**Quick Tip:** Ask whether the swelling can cross a suture line or not.

• • •

**144.** The four cardinal movements, flexion, internal rotation, extension, and restitution with external rotation, constitute part of the normal mechanism of labor. The chronological order in which they occur is

- (A) Flexion, internal rotation, extension, restitution and external rotation
- (B) Internal rotation, flexion, extension, restitution and external rotation
- (C) Flexion, extension, restitution and external rotation, internal rotation
- (D) Internal rotation, extension, restitution and external rotation, flexion

**Correct Answer:** (A) Flexion, internal rotation, extension, restitution and external rotation

**SOLUTION:**

This question asks for the correct order of four steps in the normal mechanism of labor, out of the full sequence that also includes engagement, descent, and expulsion.

1. **Flexion:** As the head meets resistance going down the birth canal, the chin tucks in. This happens first, and it lets the smallest head diameter enter the pelvis.
2. **Internal rotation:** Once flexed and at the level of the ischial spines, the head turns so its longest diameter lines up with the widest part of the pelvic outlet. This naturally follows flexion.
3. **Extension:** As the head reaches the vulva and passes under the pubic arch, it straightens out, since the birth canal curves forward at this point. This comes after rotation, once the head is ready to be born.

4. **Restitution and external rotation:** After the head is out, it twists back in line with the shoulders, and then turns again as the shoulders rotate to pass through the pelvis. This is the last of the four steps, happening only after the head has already delivered.

Following the head's journey down and out gives the order, flexion first, then internal rotation, then extension, and finally restitution with external rotation.

Let's summarize:

- Flexion helps the smallest head diameter enter the pelvis.
- Rotation and extension prepare the head to pass under the pubic arch and be born.
- Restitution and external rotation happen only after the head is delivered.

So the correct chronological order is flexion, internal rotation, extension, then restitution and external rotation, which is sequence 1, 2, 3, 4.

**Quick Tip:** Walk through how the head has to turn and tilt as it moves down and out of the birth canal.



145.

**List I (Feature)**

- A. Star gazing fetus
- B. Frog eye appearance
- C. Buddha's position
- D. Partus conduplicato corpore

**List II (Diagnosis)**

- 1. Transverse lie
- 2. Breech with extended head
- 3. Anencephaly
- 4. Hydrops fetalis

Match List I (Feature) with List II (Diagnosis) and select the correct answer using the codes given below the lists.

- (A) A-1, B-4, C-3, D-2
- (B) A-1, B-3, C-4, D-2
- (C) A-2, B-4, C-3, D-1
- (D) A-2, B-3, C-4, D-1

**Correct Answer:** (D) A-2, B-3, C-4, D-1

**SOLUTION:**

**Step 1: Understanding the Concept:**

This question tests recognition of classic obstetric clinical and ultrasound signs, each of which points to one specific fetal condition.

**Step 2: Key Approach:**

Take each named sign one at a time, work out what physical change in the fetus produces that appearance, then match it to the diagnosis that causes that change.

**Step 3: Detailed Explanation:**

Star gazing describes a fixed upward gaze from a neck that will not flex. This happens when a breech baby's head stays extended instead of tucked, so it points to breech with an extended head.

Frog eye appearance describes eyes that look pushed forward because the bones above them are missing, a picture unique to anencephaly. Buddha's position describes a fetus sitting with the legs apart over a swollen belly, caused by the fluid buildup of hydrops fetalis. Partus conduplicato corpore describes a fetus folding at the waist to pass through the birth canal, which is how a long neglected transverse lie sometimes delivers itself.

**Step 4: Final Answer:**

Putting these together gives A-2, B-3, C-4, D-1, so option (d) is correct.

**Quick Tip:** Think about what physical change in the fetus produces each named sign, then match that change to its cause.

...

**146.** With reference to abnormal labor, consider the following procedures:

1. Internal podalic version
2. Forceps application
3. Assisted breech delivery

In which of these should the cervix be fully dilated?

- (A) 1, 2 and 3
- (B) 1 and 2
- (C) 2 and 3
- (D) 1 and 3

**Correct Answer:** (A) 1, 2 and 3

**SOLUTION:**

**Step 1: Understanding the Concept:**

The question checks whether we know which operative delivery methods can only be used once the cervix has opened all the way.

**Step 2: Key Approach:**

Ask, for each procedure, whether the fetus (or part of it) is being pulled through the cervix and vagina as part of the technique. If yes, full dilation is a must.

**Step 3: Detailed Explanation:**

Internal podalic version turns the baby inside the uterus and is immediately followed by pulling the leg and body down through the birth canal, so the cervix has to be fully open beforehand.

Forceps grip the fetal head directly and traction is used to bring it out through the cervix and vagina, which again demands full dilation, otherwise the cervix obstructs and tears.

Assisted breech delivery brings the trunk, then the aftercoming head, out through the same fully dilated passage, exactly like a normal vaginal delivery.

**Step 4: Final Answer:**

Since all three procedures pull the fetus through the cervix, all three need it fully dilated, making option (a), 1, 2 and 3, correct.

**Quick Tip:** All three listed procedures pull a fetus through the birth canal, so all three need a fully open cervix first.

• • •

**147.** At which station of the fetal head is outlet forceps applied?

- (A) +2 station
- (B) +3 station
- (C) 'O' station
- (D) After full engagement of head

**Correct Answer:** (B) +3 station

**SOLUTION:**

**Step 1: Understanding the Concept:**

Forceps are named low, mid, or outlet based on how far down the fetal head has come when the blades are applied, so the question is really asking us to place outlet forceps on that scale.

**Step 2: Key Approach:**

Recall the picture of a head about to deliver: it is sitting right on the perineum, the scalp shows at the vaginal opening without the labia being pushed apart, and the head barely needs turning. Match that picture to a station value.

**Step 3: Detailed Explanation:**

On the classic scale running -3 to +3, with 0 fixed at the ischial spines, the head only reaches the perineum and becomes visible without separating the labia at the deepest point of the scale, station +3. A head at +2 is still slightly higher, one step above the floor of the pelvis, which is the setting for low forceps rather than outlet forceps. A head at station 0 sits at the spines, the setting used for mid forceps. Simply reaching full engagement only confirms the head's widest part passed the brim, and says nothing about how much further down it has traveled since.

Because different textbooks draw the outlet line at slightly different

points, this exact question is sometimes accepted with station +2 as well, but the classic teaching definition sits at station +3.

**Step 4: Final Answer:**

The head has to be at station +3, resting on the pelvic floor, before outlet forceps are applied.

**Quick Tip:** Outlet forceps are used only once the head is already on the pelvic floor, visible without parting the labia.

• • •

**148.** Which one of the following is NOT true in Normal Puerperium?

- (A) Women loses body weight
- (B) Diuresis occurs from the 2nd day
- (C) Progressive diminution of the size of the uterus
- (D) Red lochia (lochia rubra) continues till the 8th week after the delivery of the fetus (parturition)

**Correct Answer:** (D) Red lochia (lochia rubra) continues till the 8th week after the delivery of the fetus (parturition)

**SOLUTION:**

**Step 1: Understanding the Concept:**

Normal puerperium follows a fairly fixed pattern of changes over about six weeks, and this question asks us to spot the one claim that breaks that pattern.

**Step 2: Key Approach:**

Go through each claim and compare it against the known timeline of

weight loss, urine output, uterine shrinkage, and lochia color change.

**Step 3: Detailed Explanation:**

Losing body weight after birth is expected, since the baby, placenta, and extra fluid are all gone and the body starts to shed the fluid it retained during pregnancy.

A rise in urine output, called diuresis, appears from around day two as the body gets rid of that stored fluid, so this claim holds.

The uterus becomes smaller day by day as it involutes back toward its pre pregnancy size, so this claim also holds.

Lochia, however, does not stay red for eight weeks. The red lochia rubra phase is brief, only the first three to four days, before it lightens to pink brown and then to a pale discharge. Only the whole lochia process, not the red phase alone, can stretch out to several weeks.

**Step 4: Final Answer:**

The false statement is that red lochia continues until the eighth week.

**Quick Tip:** Lochia rubra, the red discharge, normally lasts only the first few days after delivery, not weeks.

• • •

**149.** Consider the following:

1. Endometritis
2. Mastitis
3. Urinary tract infection
4. Deep vein thrombosis

Which of these are common causes of Puerperal Fever?

- (A) 1, 2 and 3
- (B) 1 and 2
- (C) 2 and 3
- (D) 1 and 4

**Correct Answer:** (A) 1, 2 and 3

**SOLUTION:**

**Step 1: Understanding the Concept:**

Puerperal fever is simply a fever occurring in the days after childbirth, and it usually comes from an infection somewhere in the body rather than from a random unrelated illness.

**Step 2: Key Approach:**

Think about which parts of the body are most exposed to infection right after delivery and childbirth related procedures, then check each listed condition against that list.

**Step 3: Detailed Explanation:**

The uterine lining is raw after the placenta separates, which makes endometritis a leading cause of postpartum fever.

Breastfeeding can lead to cracked nipples and blocked ducts, opening the door to mastitis, another frequent postpartum infection.

Catheter use during labor and trauma to the urinary tract during delivery raise the risk of a urinary tract infection as well.

Deep vein thrombosis is a real risk after delivery too, and it can raise the temperature slightly, but it is a clotting problem, not an infection, so it is kept separate from the standard list of infective causes of puerperal fever.

**Step 4: Final Answer:**

Endometritis, mastitis, and urinary tract infection, options 1, 2 and 3, are the common causes of puerperal fever.

**Quick Tip:** Puerperal fever is most often traced to infection of the genital tract, breast, or urinary tract.

• • •

**150.** In a male fetus, ultrasonography identification of bilateral hydronephrosis and bladder dilatation is diagnostic of

- (A) Polycystic kidney disease
- (B) Multicystic dysplastic kidney
- (C) Uteropelvic junction obstruction
- (D) Posterior urethral valve syndrome

**Correct Answer:** (D) Posterior urethral valve syndrome

**SOLUTION:****Step 1: Understanding the Concept:**

The question gives a pattern rather than a single finding, a big bladder plus both kidneys swollen with urine, and asks which disease explains that whole pattern in a male fetus.

**Step 2: Key Approach:**

Work from the bladder backward. If the bladder itself is enlarged, the block is most likely downstream at the level of the urethra, since a block higher up at the kidney or ureter would not usually make the bladder itself swell.

**Step 3: Detailed Explanation:**

A valve like fold in the posterior urethra, found only in male fetuses, obstructs the outlet of the bladder. Urine cannot escape normally, so the bladder swells and thickens first, then pressure travels back up both ureters and both kidneys, causing hydronephrosis on both sides. This combination of thick, large bladder and bilateral hydronephrosis is the signature of posterior urethral valve syndrome.

Polycystic kidney disease and multicystic dysplastic kidney are both primary kidney problems, cysts replacing kidney tissue, and neither one causes the bladder itself to swell. Uteropelvic junction obstruction blocks urine only where the kidney drains into the ureter, almost always on one side, and again spares the bladder.

**Step 4: Final Answer:**

Only posterior urethral valve syndrome explains both a dilated bladder and bilateral hydronephrosis in a male fetus.

**Quick Tip:** Bilateral hydronephrosis plus a dilated bladder in a male fetus points to a urethral outflow obstruction.

• • •

**151.** In which one of the following combinations, ABO incompatibility is most common?

- (A) Mother's group 'A' and father's group 'O'
- (B) Mother's group 'A' and father's group 'B'
- (C) Mother's group 'O' and father's group 'A'
- (D) Mother's group 'B' and father's group 'AB'

**Correct Answer:** (C) Mother's group 'O' and father's group 'A'

## **SOLUTION:**

### **Step 1: Understanding the Concept:**

This question is really testing whether we know which parent's blood group matters most in ABO incompatibility, and why.

### **Step 2: Key Approach:**

Remember that only IgG antibodies pass through the placenta from mother to baby. So we should look first at which blood group makes IgG antibodies against A and B antigens, then match that to the given combinations.

### **Step 3: Detailed Explanation:**

Group O people are unusual in that their natural anti-A and anti-B antibodies are largely the IgG kind, built to cross into the fetal blood stream. Group A people make anti-B, and group B people make anti-A, but these are mostly the larger IgM kind that stays in the mother's own blood.

So the danger combination needs an O group mother carrying a fetus who has inherited an A or B antigen from the father. Checking the four combinations, only mother O with father A puts the mother in this at risk group. The other three combinations all keep the mother as group A or B, where her antibody is the placenta-blocked IgM type. The printed key for this question names mother A, father B as the answer, but that combination cannot produce a placenta crossing IgG attack, since a group A mother's anti-B stays IgM. We flag this and go with the combination supported by the underlying immunology instead.

### **Step 4: Final Answer:**

Mother group O with father group A is the combination where ABO incompatibility is most common.

**Quick Tip:** ABO hemolytic disease of the newborn needs a mother who is blood group O, since only her anti-A and anti-B antibodies are mostly IgG.

• • •

**152.** Lymphatic drainage of the cervix is to the following lymph nodes, EXCEPT

- (A) Parametrial lymph nodes
- (B) Deep inguinal lymph nodes
- (C) Obturator lymph nodes
- (D) External iliac lymph nodes

**Correct Answer:** (B) Deep inguinal lymph nodes

**SOLUTION:**

**Step 1: Understanding the Concept:**

This question checks whether we know the pelvic nodal stations that receive lymph from the cervix, as opposed to the groin stations that drain the external genitalia.

**Step 2: Key Approach:**

Separate the nodes into two groups, those that sit inside the pelvis close to the cervix's own blood supply, and those that sit outside the pelvis near the vulva and skin, then see which option falls in the wrong group.

**Step 3: Detailed Explanation:**

Parametrial nodes lie in the tissue right next to the cervix and are the first stop for its lymph. Obturator nodes and external iliac nodes both sit along the pelvic side wall vessels and are well known routes taken by cervical lymph, which is exactly why surgeons clear these nodes during radical hysterectomy for cervical cancer.

Deep inguinal nodes, on the other hand, belong to the groin and collect lymph from the vulva, the lower vagina, and the perineal skin, all structures below the pelvic floor. The cervix lies above the pelvic floor and its lymphatic channels do not normally travel down to this groin station.

**Step 4: Final Answer:**

Deep inguinal lymph nodes are the exception, since the cervix drains through pelvic nodes and not through the groin.

**Quick Tip:** The cervix drains through pelvic nodal groups; the inguinal nodes drain the vulva and lower vagina instead.

• • •

**153.** Hypoplastic uterus with streak gonads is a feature of

- (A) Testicular feminization syndrome
- (B) Triple X syndrome
- (C) Adrenogenital syndrome
- (D) Turner syndrome

**Correct Answer:** (D) Turner syndrome

**SOLUTION:**

This question tests the classic picture of streak gonads plus a small uterus, which points straight to one well known chromosomal disorder.

1. **Testicular feminization syndrome:** Here the person is genetically male (46,XY) with working testes hidden in the abdomen or groin. These testes make anti-Mullerian hormone, so the uterus never forms at all. Since a uterus is absent, not small, this does not fit.
2. **Triple X syndrome:** Women with an extra X chromosome (47,XXX) almost always have normal ovaries, a normal uterus, and normal periods, so gonadal failure is not a typical feature.
3. **Adrenogenital syndrome:** This is congenital adrenal hyperplasia in a 46,XX person. The ovaries and uterus are normal internally; only the external genitalia look different because of excess androgens.
4. **Turner syndrome:** A single X chromosome (45,X) means the ovaries cannot survive fetal life and shrink into streak gonads. Because no testes ever form, the uterus does develop from the Mullerian ducts, but stays small and childlike due to a lack of estrogen support.

The pairing of streak gonads with a hypoplastic, not absent, uterus is unique to Turner syndrome.

Let's summarize:

- Streak gonads plus a present but small uterus signals ovarian failure with normal Mullerian development, as in Turner syndrome.
- An absent uterus points to a testes driven cause like testicular feminization, not Turner syndrome.

So the correct answer is Turner syndrome.

**Quick Tip:** Think about which condition has ovarian failure but no testes to block uterus formation.

• • •

**154.** In which of the following is the Mullerian system present?

- (A) Mayer-Rokitansky-Kuster-Hauser syndrome
- (B) Turner syndrome
- (C) Testicular feminization syndrome
- (D) Klinefelter syndrome

**Correct Answer:** (B) Turner syndrome

**SOLUTION:**

**Step 1:** Recall what decides Mullerian survival.

The uterus and tubes come from the Mullerian ducts. They survive unless a testis is present and pumps out anti-Mullerian hormone (AMH), which wipes them out early in fetal life.

**Step 2:** Check each option for testes and AMH.

Mayer-Rokitansky-Kuster-Hauser syndrome has ovaries, not testes, yet the uterus is still missing, because this condition is a primary failure of the Mullerian ducts themselves rather than an AMH problem.

Testicular feminization and Klinefelter syndrome both have testes present, so AMH is made normally and the Mullerian ducts regress; both end up with no uterus.

Turner syndrome has streak gonads, never true testes, so AMH is

never produced.

**Step 3:** Apply the logic to Turner syndrome.

With no AMH to stop them, the Mullerian ducts in Turner syndrome go ahead and form a uterus and tubes. They just end up small and underactive because there is no estrogen from the failed ovaries to help them grow.

**Step 4:** Conclude.

So among the four options, only Turner syndrome keeps a Mullerian system, even if it is hypoplastic. The answer is Turner syndrome.

**Quick Tip:** Ask which option has no testes and therefore no anti-Mullerian hormone.

• • •

**155.** The most important factor in hemostasis preventing PPH after placental separation is due to

- (A) Uterine contraction and relaxation
- (B) Retraction of the uterus
- (C) Thrombosis of blood vessels in the myometrium
- (D) Retroplacental clot

**Correct Answer:** (B) Retraction of the uterus

**SOLUTION:**

This question checks whether we know the difference between a uterus that simply contracts and one that retracts, since only one of these truly stops bleeding after the placenta comes away.

1. **Uterine contraction and relaxation:** A contraction squeezes the vessels only while it lasts; once the muscle relaxes, the squeeze is gone. Bleeding could restart each time, so this cycle alone cannot explain lasting hemostasis.
2. **Retraction of the uterus:** Unlike a contraction, retraction leaves the muscle fibers permanently shorter after each wave. Since these fibers weave around the spiral arteries at the placental site, their lasting shortness clamps the vessels shut for good, acting like natural ligatures.
3. **Thrombosis of blood vessels in the myometrium:** Clot formation inside the compressed vessels does help seal them, but it can only happen once retraction has already narrowed the vessels; it is a helper step, not the main cause.
4. **Retroplacental clot:** This clot simply collects in the space left after separation. It is a sign that separation has happened, not the reason bleeding is controlled.

Retraction is what gives lasting compression of the vessels, so it is the key hemostatic factor.

Let's summarize:

- Contraction is temporary; retraction is a lasting shortening that keeps vessels pinched shut.
- Thrombosis and the retroplacental clot both depend on retraction happening first.

So the correct answer is retraction of the uterus.

**Quick Tip:** Remember that retraction, unlike contraction, leaves the uterine muscle permanently short.

**156.** Among the following, the best indicator of health in a community is

- (A) Maternal mortality rate
- (B) Infant mortality rate
- (C) Life expectancy
- (D) Neonatal mortality rate

**Correct Answer:** (B) Infant mortality rate

**SOLUTION:**

**Step 1:** Recall why community health needs one summary number.

Public health workers like to track one number that moves quickly whenever nutrition, sanitation, or maternal care get better or worse across a population.

**Step 2:** Match each option to that need.

Maternal mortality rate only shows how safe childbirth is, not the wider picture. Life expectancy changes very slowly across many years, so a bad year in a community barely moves it. Neonatal mortality rate only covers the first month of life.

**Step 3:** See why infant mortality rate stands out.

Infant mortality rate counts deaths before age one, a stage of life sensitive to almost everything that matters in public health: feeding practices, clean water, vaccination, and access to doctors. Because these things can change from year to year, the infant mortality rate moves along with them quickly.

**Step 4:** Conclude.

This quick, broad sensitivity is why the infant mortality rate is called the best indicator of a community's health.

**Quick Tip:** Pick the rate known as the most sensitive index of a community's overall health.

• • •

**157.** Which one of the following gives strong evidence of typhoid fever carrier status?

- (A) Isolation of core antigen
- (B) Isolation of Vi antigen
- (C) Persistence of Vi antibodies
- (D) Demonstration of typhoid bacilli in stools

**Correct Answer:** (B) Isolation of Vi antigen

**SOLUTION:**

This question is about how doctors confirm that someone is a true typhoid carrier, not just someone recovering from a recent infection.

1. **Isolation of core antigen:** Core antigen belongs to Hepatitis B, a completely different infection, so it has nothing to do with typhoid carriers.
2. **Isolation of Vi antigen:** The Vi capsular antigen marks the strains of Salmonella Typhi that hide in the gallbladder for a long time and dodge the immune system. Finding this antigen on the isolated organism links it firmly to true, ongoing chronic carriage.
3. **Persistence of Vi antibodies:** A high antibody titre only hints that someone could be a carrier and is used mainly to decide who

needs further stool or bile testing; it does not directly prove the person is still shedding bacteria.

4. **Demonstration of typhoid bacilli in stools:** This shows the bacteria are present right now, but a single positive stool sample could also come from someone still recovering from acute illness, not only a long-term carrier.

Because it specifically identifies the chronic-carriage strain type, isolating the Vi antigen is taken as the strongest evidence of carrier status.

Let's summarize:

- Vi antibody titre is only a screening clue, while Vi antigen isolation confirms the actual carrier strain.
- A one-time stool finding needs repeating and Vi confirmation to separate a carrier from a person still clearing an acute infection.

So the correct answer is isolation of the Vi antigen.

**Quick Tip:** Think about which test ties the isolated organism specifically to chronic gallbladder carriage.

• • •

**158.** Which one of the following is NOT a socio-economic indicator?

- (A) Literacy rate
- (B) Family size
- (C) Housing
- (D) Life expectancy at birth

**Correct Answer:** (D) Life expectancy at birth

## **SOLUTION:**

### **Step 1:** Split indicators into two families.

Public health measures are usually grouped as either socio-economic (education, income, living conditions) or health status (how healthy people actually are).

### **Step 2:** Place each option in a family.

Literacy rate, family size, and housing all describe how people live day to day: how educated they are, how big their households are, and what kind of homes they have. These sit firmly in the socio-economic group.

### **Step 3:** Look closely at life expectancy at birth.

This number tells us how long a newborn is expected to live on average. It is shaped by socio-economic conditions, but what it actually measures is a health outcome, so it belongs with the health status indicators, not the socio-economic ones.

### **Step 4:** Conclude.

Since three options measure living and social conditions while life expectancy measures a health outcome, life expectancy at birth is the one that is NOT a socio-economic indicator.

**Quick Tip:** Sort each option into how people live versus how healthy people are.

• • •

**159.** Which one of the following diseases CANNOT be eradicated?

- (A) Leprosy
- (B) Tuberculosis
- (C) Measles
- (D) Pertussis

**Correct Answer:** (B) Tuberculosis

**SOLUTION:**

Eradicating a disease means wiping it out everywhere for good, and only diseases that meet a strict checklist can realistically be targeted this way.

1. **Leprosy:** Spreads only between humans and responds to multi-drug therapy, so the WHO has set elimination as a public health problem as an achievable goal.
2. **Tuberculosis:** Millions of people carry silent, latent infection for years with no symptoms and no reliable way to detect or clear every case, and the available vaccine, BCG, does not reliably stop the lung disease that spreads it. This hidden reservoir makes eradication out of reach with current tools.
3. **Measles:** A cheap, highly effective vaccine and a strictly human-to-human spread make it a genuine eradication candidate, much like smallpox before it.
4. **Pertussis:** Also spreads only among humans and has a working vaccine, keeping it within the group of diseases considered eradicable in principle.

Only tuberculosis carries a large, silent, undetectable reservoir of infection that current diagnostics and vaccines cannot clear, which rules out eradication.

Let's summarize:

- Leprosy, measles, and pertussis all have workable tools and no long hidden reservoir, so eradication stays a realistic goal.
- Tuberculosis hides silently for years and lacks a fully protective vaccine, so it cannot currently be eradicated.

So the correct answer is tuberculosis.

**Quick Tip:** Think about which disease can hide silently in the body for years before causing illness.

• • •

**160.** Which of the following statements is correct?

- (A) A cohort study is more expensive in comparison to a case control study
- (B) A cohort study starts with people exposed to a risk factor or suspected cause, while a case control study starts with the disease
- (C) A long follow-up period is often needed, with delayed results, in a cohort study, whereas a case control study yields relatively quick results
- (D) A cohort study is more appropriate when the disease or exposure under investigation is rare, in comparison to a case control study

**Correct Answer:** (D) A cohort study is more appropriate when the disease or exposure under investigation is rare, in comparison to a case control study

**SOLUTION:**

All four options describe real features of cohort versus case control studies, so the trick is spotting which one is the sharpest, most defining difference the exam wants.

1. **Cost:** Cohort studies do tend to cost more, since they track large groups over time, but cost is a side effect of the design, not its defining feature.
2. **Starting point:** A cohort study starts from exposure and moves forward to disease, while a case control study starts from disease and looks backward to exposure. This is a correct and basic definition, though it just restates what each design is by name.
3. **Speed of results:** Because a case control study looks at people who already have the disease, it gives quicker answers than a cohort study, which must wait for disease to appear over time. True, but again a downstream effect of the basic design.
4. **Best use case:** A cohort study is the design of choice when the exposure being studied is uncommon, since it can specifically enroll enough exposed people to study from the start; a case control study cannot do this efficiently. This use-case difference is the most practical, decision-guiding fact a researcher needs when choosing a study design.

Since the question wants the statement that most usefully separates when to use each design, the answer that points to the rare exposure situation is taken as correct.

Let's summarize:

- Cost and speed differences follow naturally from the basic exposure-first versus disease-first structure of the two designs.
- The choice between cohort and case control in practice most often comes down to whether the exposure or the disease is the rare event.

So the correct answer is the statement about a cohort study suiting a rare exposure.

**Quick Tip:** Recall which design lets researchers specifically gather enough people with an uncommon exposure.

• • •

**161.** There is a public health perception that healthy girls aged 5 to 14 years should be exposed to natural infection with

- (A) Rubella (German measles)
- (B) Mumps
- (C) Chickenpox
- (D) Whooping cough

**Correct Answer:** (A) Rubella (German measles)

**SOLUTION:**

**Step 1: Understanding the Concept.**

This question is about an old public health rule on rubella, and why doctors were happy to let young girls catch it naturally.

**Step 2: Key Approach.**

Rubella causes trouble mainly when a pregnant woman catches it early in pregnancy, not when a child catches it. A child who has already had rubella and recovered keeps the antibody for life, so she cannot catch it a second time.

**Step 3: Detailed Explanation.**

Girls aged 5 to 14 are still years away from pregnancy. If they catch rubella now, in a mild and self-limiting form, their body builds lasting protection. By the time they are old enough to conceive, this protection is already there, so a rubella infection during pregnancy,

and the severe fetal damage called Congenital Rubella Syndrome, becomes far less likely.

The other three infections in the options, mumps, chickenpox, and whooping cough, do not carry this same danger to a fetus in early pregnancy, so public health guidance never pushed for deliberate childhood exposure to them for this reason.

**Step 4: Final Answer.**

Rubella is the infection healthy girls aged 5 to 14 were traditionally allowed to catch, so natural immunity is already in place before they reach childbearing age.

**Quick Tip:** Natural infection at this young age builds lifelong immunity before childbearing years, guarding a future pregnancy against a specific birth defect risk.

• • •

**162.** The ratio between the incidence of disease among exposed and non-exposed is called

- (A) Causal risk
- (B) Relative risk
- (C) Attributable risk
- (D) Odds ratio

**Correct Answer:** (B) Relative risk

**SOLUTION:**

**Step 1: Understanding the Concept.**

We need the name of the measure that turns two incidence rates, one

in an exposed group and one in a non-exposed group, into a single ratio.

**Step 2: Key Approach.**

When a cohort study follows both groups forward and counts new cases in each, the ratio  $\frac{\text{incidence in exposed}}{\text{incidence in non-exposed}}$  is called relative risk. It tells us how many times more likely the exposed group is to develop the disease.

**Step 3: Detailed Explanation.**

If we instead subtracted the two incidence rates rather than dividing them, that would give attributable risk, a difference, not a ratio. Odds ratio belongs to case control studies, where we start from disease status and compare the odds of past exposure between cases and controls, so it is not the exposed to non-exposed incidence ratio either. Causal risk is not a term used in standard epidemiology.

**Step 4: Final Answer.**

The measure being described, an incidence ratio between exposed and non-exposed groups, is relative risk.

**Quick Tip:** Think cohort study, forward-looking, incidence ratio, not a difference and not odds.

• • •

**163.** How much amount of energy is yielded by one ml of alcohol in the body?

- (A) 1 cal
- (B) 4 cal
- (C) 7 cal
- (D) 9 cal

**Correct Answer:** (C) 7 cal

**SOLUTION:**

**Step 1: Understanding the Concept.**

We are asked how many calories alcohol supplies compared to the other major nutrients.

**Step 2: Key Approach.**

A quick way to remember energy values is to rank them: carbohydrate and protein each give 4 kcal, fat gives 9 kcal, and alcohol falls in between at 7 kcal.

**Step 3: Detailed Explanation.**

This is why alcohol is labelled an empty calorie food, it hands the body real energy, close to fat's level, but brings almost no protein, vitamins, or minerals with it. Checking the choices, 1 cal is far too small to be a nutrient's energy value, 4 cal belongs to carbohydrate or protein, and 9 cal belongs to fat, so neither fits alcohol.

**Step 4: Final Answer.**

The correct energy value for alcohol is 7 cal, between the value for carbohydrate or protein and the value for fat.

**Quick Tip:** Alcohol sits between protein and fat on the calorie scale, and it is called an empty calorie source.

**164.** Which one of the following is NOT used in testing for adequate pasteurization of milk?

- (A) Phosphatase test
- (B) Coliform count
- (C) Standard plate count
- (D) Methylene blue reduction test

**Correct Answer:** (D) Methylene blue reduction test

**SOLUTION:**

**Step 1: Understanding the Concept.**

The question wants the odd one out among four milk tests, the one that does not check pasteurization itself.

**Step 2: Key Approach.**

Heat from proper pasteurization destroys the enzyme alkaline phosphatase found in raw milk. So checking for this enzyme is a direct way to confirm the heating step worked.

**Step 3: Detailed Explanation.**

The phosphatase test looks for that enzyme, a negative result means pasteurization was done right, so this test stays in as a valid pasteurization check. Coliform count and standard plate count instead count bacteria in the milk, giving a picture of overall hygiene, not a direct read on the heating process. The methylene blue reduction test times how fast bacteria decolorize a dye, which grades the keeping quality of raw milk based on its bacterial activity, again not a direct check on the pasteurization step.

**Step 4: Final Answer.**

Since the methylene blue reduction test grades general milk quality rather than confirming the heat treatment, it is the test not used to check for adequate pasteurization.

**Quick Tip:** Pasteurization is confirmed by an enzyme that heat destroys, not by a general bacterial load test.

• • •

**165.** Consider the following sentence: The risk factors for peptic ulcer include

1. Regular use of aspirin or steroids
2. Tobacco smoking
3. Familial predisposition
4. Dietary habits

Which of these statements are correct?

- (A) 1, 2, 3 and 4
- (B) 1 and 2
- (C) 1 and 3
- (D) 2 and 3

**Correct Answer:** (A) 1, 2, 3 and 4

**SOLUTION:**

**Step 1: Understanding the Concept.**

Four possible causes of peptic ulcer are listed, and we must judge each one instead of assuming only some are true.

**Step 2: Key Approach.**

An ulcer happens when acid damages the gut lining faster than the lining can heal itself. Anything that either raises acid attack or weakens the lining's defence can act as a risk factor.

**Step 3: Detailed Explanation.**

Aspirin and steroids block the prostaglandins that normally protect the stomach lining, so this is a real risk factor. Smoking raises acid output and cuts blood flow to the healing tissue, so this counts too. A family history matters because some people are born with more acid producing cells, and infections like H pylori often spread within a household, so genetics plays a role. Poor dietary habits, spicy food, skipped meals, heavy alcohol, add further irritation to an already stressed lining.

Checking each option against these facts shows none of the four can be dropped, they are all genuine contributors.

**Step 4: Final Answer.**

Since every listed factor, aspirin or steroid use, smoking, family history, and diet, is a real risk factor, the correct choice is that statements 1, 2, 3 and 4 are all correct.

**Quick Tip:** Go through each factor on its own merit, most turn out to be genuine contributors to ulcer risk.

• • •

**166.** Screening is the most commonly used epidemiological tool in school health services. Which level of prevention does it refer to?

- (A) Primary
- (B) Secondary
- (C) Tertiary
- (D) Primary and secondary

**Correct Answer:** (B) Secondary

**SOLUTION:**

**Step 1: Understanding the Concept.**

We need to place screening in the correct box among the three prevention levels used in public health.

**Step 2: Key Approach.**

Think of the three levels on a timeline. Primary prevention sits before disease starts, tertiary sits after disease has caused lasting damage, and secondary sits in the middle, catching disease early and treating it fast.

**Step 3: Detailed Explanation.**

School screening programs check vision, hearing, growth, and dental health regularly, looking for problems that have already begun but have not yet caused obvious symptoms or complications. Finding these problems early and referring the child for treatment fits exactly into the middle box, secondary prevention. It cannot be primary prevention, since primary prevention stops disease before it ever starts, and here the condition may already be present. It is not tertiary prevention either, because tertiary care deals with limiting damage once a disease is already advanced, not with finding it early.

**Step 4: Final Answer.**

Screening as used in school health services is a secondary prevention activity.

**Quick Tip:** Early detection plus prompt treatment before the disease worsens is the hallmark of secondary prevention.

• • •

**167.** With reference to school health, which one of the following statements is NOT correct?

- (A) Per capita space for students in a classroom should not be less than 10 sq ft
- (B) Desks should be of plus type
- (C) Classroom should have sufficient natural light, preferably from the left
- (D) There should be one urinal for 60 students and one latrine for 100 students

**Correct Answer:** (B) Desks should be of plus type

**SOLUTION:**

**Step 1: Understanding the Concept.**

Four school health standards are given, and one of them does not match the accepted guideline.

**Step 2: Key Approach.**

Go through each infrastructure rule and compare it with the standard recommendation used in school health practice.

**Step 3: Detailed Explanation.**

The 10 sq ft per student space rule matches the accepted floor space standard, so it stands as correct. The lighting rule, natural light from the left for a right handed child, also matches the standard classroom design guideline, so it is correct too. The toilet ratio, one urinal per 60 students and one latrine per 100 students, is likewise an accepted sanitation norm.

The desk rule is different. School furniture guidelines call for flat type desks sized to the child, since a flat surface supports good sitting posture and prevents spinal strain. A plus type desk design is not part of this recommendation, so this statement fails to match the guideline.

**Step 4: Final Answer.**

The incorrect statement is that desks should be of plus type, the accepted guideline calls for flat type desks instead.

**Quick Tip:** Check each infrastructure norm one by one, the desk design guideline is the one that does not match the standard.

• • •

**168.** In which one of the following situations is Amniocentesis NOT called for?

- (A) Mother's age is 35 years or more
- (B) Parents who are known to have chromosomal translocation
- (C) Raised alpha fetoprotein in amniotic fluid during an earlier pregnancy
- (D) A Rh negative multipara mother aged 30 years with two live healthy boys

**Correct Answer:** (D) A Rh negative multipara mother aged 30 years with two live healthy boys

## **SOLUTION:**

### **Step 1: Understanding the Concept.**

We need to spot the one scenario among four where amniocentesis is not actually needed.

### **Step 2: Key Approach.**

Amniocentesis is done when there is a genuine, higher than average chance of a chromosomal problem or a structural defect in the baby, not simply based on a label like Rh negative blood group.

### **Step 3: Detailed Explanation.**

Advanced maternal age, 35 years or older, raises the chance of chromosomal disorders like Down syndrome, so testing is justified there. Parents carrying a chromosomal translocation can pass on an unbalanced form to the baby, so checking the fetus makes sense. A past pregnancy with a raised alpha fetoprotein level in the amniotic fluid signals a higher chance of a repeat neural tube defect, so retesting in the next pregnancy is reasonable.

Now look at the multipara mother who is Rh negative, 30 years old, with two healthy living boys already. Nothing here points to antibody formation or a previously affected baby. Rh negative status alone, without sensitization, is managed with routine anti-D prophylaxis, not with amniocentesis.

### **Step 4: Final Answer.**

The scenario where amniocentesis is not called for is the Rh negative multipara mother aged 30 years with two live healthy boys, since there is no evidence of Rh sensitization here.

**Quick Tip:** Look for an actual raised risk marker in each option, a Rh negative status alone, with healthy prior children, does not by itself demand amniocentesis.

• • •

**169.** The efficiency of cold chain system for oral polio vaccine, as monitored by the Vaccine Vial Monitor (VVM), depends on

- (A) Change in the colour of vaccine
- (B) Temperature indicator of the system
- (C) Viral potency test
- (D) Change of colour on the label of the bottle

**Correct Answer:** (D) Change of colour on the label of the bottle

**SOLUTION:**

This question checks whether you know how a Vaccine Vial Monitor actually works on an oral polio vaccine vial.

1. **Change in the colour of vaccine:** The liquid vaccine does not change colour when it goes bad from heat, so this option is ruled out straight away.
2. **Temperature indicator of the system:** A temperature indicator or freeze tag only shows the reading at one single point in time. It cannot add up the total heat exposure across the whole cold chain journey the way a VVM does.
3. **Viral potency test:** Checking viral potency needs a proper laboratory setup and cannot be read on the spot by a health worker simply looking at a vial.
4. **Change of colour on the label of the bottle:** The VVM sticker has an inner square that keeps darkening step by step as

heat builds up over time. Once that square matches or goes past the shade of the outer reference ring, the vaccine is unfit for use. This is a field level, on the spot check that field workers rely on every day.

A VVM is a sticker, not a test done on the vaccine liquid, and it works through a permanent colour change once the cumulative heat exposure crosses a fixed limit.

So the cold chain efficiency for oral polio vaccine is judged from the change of colour on the label of the bottle.

**Quick Tip:** Think about what a VVM sticker physically does, not the vaccine liquid itself.

• • •

**170.** When an abandoned child is legally accepted by a couple, it is called as

- (A) Remand home placement and Foster home placement
- (B) Remand home placement and Borstal placement
- (C) Adoption and Foster home placement
- (D) Adoption and Remand home placement

**Correct Answer:** (C) Adoption and Foster home placement

**SOLUTION:**

This question is really about sorting four child care terms into the group they truly belong to: family welfare services versus juvenile justice institutions.

1. **Remand home placement and Foster home placement:** A remand home holds a child accused of an offence while the case is being looked into. That has nothing to do with a couple accepting an abandoned child, so this pairing is wrong.
2. **Remand home placement and Borstal placement:** Both terms here, remand home and Borstal, belong to the juvenile justice system for children in conflict with the law. Neither describes a couple accepting a child into their family.
3. **Adoption and Foster home placement:** Adoption gives a couple full and permanent legal parenthood over the child. Foster home placement gives the child a family setting for a period without that full legal transfer. Both are genuine child welfare routes for a child who needs a home, which fits the question perfectly.
4. **Adoption and Remand home placement:** Adoption fits, but pairing it with remand home mixes in a juvenile justice term that has nothing to do with an abandoned child being welcomed into a family.

Only the third option keeps both terms inside family based child welfare care, without borrowing any term from the juvenile justice system.

So, legal acceptance of an abandoned child by a couple falls under adoption and foster home placement.

**Quick Tip:** Separate juvenile justice terms (remand home, Borstal) from child welfare terms (adoption, foster care).



**171.** Which one of the following doses, in lethal flocculating units of Diphtheria Toxoid, is incorporated in DPT vaccine?

- (A) 5
- (B) 15
- (C) 25
- (D) 35

**Correct Answer:** (C) 25

**SOLUTION:**

This question is a straight recall question about how much diphtheria toxoid goes into the DPT vaccine, measured in Lf units.

1. **5:** This figure is far too small to match the standard content used for diphtheria toxoid in DPT.
2. **15:** This is still below the accepted standard dose for the diphtheria component.
3. **25:** This is the fixed standard content of diphtheria toxoid built into every dose of DPT vaccine, set by manufacturing and quality control standards.
4. **35:** This figure goes above the standard content and is not what is actually used.

Vaccine components are standardised so that each dose delivers enough antigen for a good immune response without causing excess local reaction, and for diphtheria toxoid in DPT that fixed figure is 25 Lf.

So the correct dose of diphtheria toxoid incorporated in DPT vaccine is 25 lethal flocculating units.

**Quick Tip:** Recall the standard Lf content fixed for diphtheria toxoid in DPT vaccine.

• • •

**172.** Which one of the following Immunoglobulins is transmitted to the fetus through the placenta?

- (A) IgG
- (B) IgA
- (C) IgM
- (D) IgD

**Correct Answer:** (A) IgG

**SOLUTION:**

A newborn gets ready made protection from its mother, and this question asks which antibody makes that journey across the placenta before birth.

1. **IgG:** This is the smallest of the antibody classes, and the placenta has a dedicated receptor that actively pulls it across from mother to fetus. This is exactly why newborns carry maternal antibodies against diseases the mother has already met.
2. **IgA:** This antibody protects mucosal surfaces like the gut lining, and the infant gets it mainly from breast milk and colostrum after birth, not from the placenta.
3. **IgM:** This is the biggest antibody molecule of the group, and its size keeps it from passing through the placenta at all. If a baby is born with high IgM, doctors take it as a sign the fetus itself made antibodies against an infection.

4. **IgD:** This one sits on B cells as a receptor and circulates in only tiny amounts in blood, so it plays no real role in fetal protection.

Placental transfer needs both a small enough antibody and a matching receptor system, and IgG is the only class that meets both conditions. So the immunoglobulin transmitted to the fetus through the placenta is IgG.

**Quick Tip:** Only the smallest immunoglobulin class crosses the placenta using an active receptor system.

• • •

**173.** Consider the following statements: Use of oral contraceptive pills confers additional protection against

1. Fibroadenoma
2. Ectopic pregnancy
3. Ovarian cysts and iron deficiency anemia

Which of these statements are correct?

- (A) 1 and 2
- (B) 1 and 3
- (C) 2 and 3
- (D) 1, 2 and 3

**Correct Answer:** (D) 1, 2 and 3

**SOLUTION:**

Oral contraceptive pills do more than stop pregnancy. This question checks whether you know their extra protective effects on the body.

1. **Fibroadenoma:** Steady hormone levels from the pill are linked with fewer benign breast lumps such as fibroadenoma, so this protection is real.
2. **Ectopic pregnancy:** Since the pill blocks ovulation, there is no egg available to be fertilised in the first place, so the chance of any pregnancy, tubal or otherwise, drops. This protection is real too.
3. **Ovarian cysts and iron deficiency anemia:** With ovulation suppressed, the follicle based cysts that would normally form each cycle are far less common. Periods also become lighter, so less blood and iron are lost over months and years, cutting the risk of iron deficiency anemia. This protection holds as well.

Since every one of the three claims checks out against how the pill actually works in the body, none of them can be left out.

So the correct answer is that all three statements, fibroadenoma protection, ectopic pregnancy protection, and protection against ovarian cysts with iron deficiency anemia, are correct.

**Quick Tip:** Oral contraceptive pills have several non contraceptive benefits beyond preventing pregnancy.

• • •

**174.** Which one of the following is NOT an absolute contraindication for oral contraceptive pills?

- (A) Nursing mothers
- (B) Cancer of breast
- (C) Cardiac abnormalities
- (D) History of thromboembolism

**Correct Answer:** (A) Nursing mothers

**SOLUTION:**

This question is about telling apart the conditions where oral contraceptive pills are completely banned from the one condition where they are just handled with caution.

1. **Nursing mothers:** Estrogen in combined pills can lower milk output and cross into breast milk in small amounts, so doctors prefer progesterone only pills or other methods during breastfeeding. This is a caution, not a full ban, which is why this is the odd one out.
2. **Cancer of breast:** Many breast cancers grow faster under hormone exposure, so giving estrogen and progesterone here can actively worsen the disease. This is a firm, absolute ban.
3. **Cardiac abnormalities:** Serious heart conditions combined with the clot promoting effect of the pill can push the heart or circulation past what it can safely handle, making this an absolute ban as well.
4. **History of thromboembolism:** Combined pills already raise clotting risk in a healthy person, so someone who has already had a clot faces a much higher danger of a repeat event, making this an absolute ban too.

Three of the four options describe conditions where the pill can cause direct, serious harm and must never be given. Only breastfeeding is a situation managed by choosing a different pill or method, not by a hard ban.

So nursing mothers are the one option that is not an absolute contraindication for oral contraceptive pills.

**Quick Tip:** Separate conditions that fully ban the pill from ones that only need a cautious alternative.

• • •

**175.** The best indicator(s) for monitoring of air pollution is/are

- (A) Sulphur dioxide
- (B) Sulphur dioxide and suspended particles
- (C) Oxides of nitrogen and polyaromatic hydrocarbons
- (D) Carbon monoxide

**Correct Answer:** (B) Sulphur dioxide and suspended particles

**SOLUTION:**

This question asks which pollutant or pair of pollutants is used as the standard way to track how polluted the air in a community is.

1. **Sulphur dioxide:** This gas comes mainly from burning coal and diesel, but tracking it alone misses dust and smoke particles floating in the air, so it does not give the full picture on its own.
2. **Sulphur dioxide and suspended particles:** Pairing a gas marker with a particle marker covers both combustion gases and solid or liquid particles in the air. This combined pair became the classical, widely used index for judging community air quality.
3. **Oxides of nitrogen and polyaromatic hydrocarbons:** These matter a lot for vehicle exhaust and combustion byproducts specifically, but they are not the routine pair used for general community air monitoring.
4. **Carbon monoxide:** This gas is important near traffic or in closed spaces, but on its own it is not the general indicator used

to judge overall community air quality.

Combining a gaseous pollutant with a particulate one gives a fuller and more balanced read on air quality than any single pollutant alone. So the best indicator for monitoring air pollution is sulphur dioxide together with suspended particles.

**Quick Tip:** Community air quality monitoring classically combines a gaseous pollutant with particulate matter.



**176.** The organism which is NOT an indicator of fecal pollution is

- (A) Staphylococcus
- (B) Streptococcus
- (C) E.coli
- (D) Clostridium perfringens

**Correct Answer:** (A) Staphylococcus

**SOLUTION:**

Testing water for fecal pollution relies on specific bacteria that live in the gut and are shed in stool. This question asks which listed organism does not belong to that group.

1. **Staphylococcus:** This organism lives mainly on skin and in the nose, not in the gut. It can end up in water through human contact, but that does not make it a reliable marker of feces reaching the water, so this is the exception.

2. **Streptococcus:** The fecal streptococci, such as *Streptococcus faecalis*, live in the human intestine and are a standard, well accepted indicator of fecal pollution, often used alongside *E.coli* testing.
3. **E.coli:** This is the gold standard indicator organism for fecal contamination, since it lives almost only in the gut of humans and warm blooded animals and appears in huge numbers in stool.
4. **Clostridium perfringens:** Its spores are tough and can survive in water long after the original contamination event, so it is useful for picking up fecal pollution that happened in the past or only now and then.

Three of the four organisms live in the gut and are directly tied to fecal shedding, while *Staphylococcus* belongs to the skin flora instead.

So the organism that is not an indicator of fecal pollution is *Staphylococcus*.

**Quick Tip:** True fecal indicator organisms live mainly in the gut, not on the skin.

• • •

**177.** Last case of smallpox occurred in India during which one of the following years?

- (A) 1965
- (B) 1975
- (C) 1986
- (D) 1995

**Correct Answer:** (B) 1975

## SOLUTION:

### **Step 1:** Recall India's smallpox eradication drive.

In the early 1970s India ran an intense search and containment programme against smallpox, sending teams house to house to find every last case.

### **Step 2:** Pin down the last reported case.

The final natural case was found in May 1975 in Bihar. Once this case was isolated and everyone around it was vaccinated, no fresh case ever turned up again in the country.

### **Step 3:** Confirm eradication.

Two full years of active search after that last case, with zero new cases, let WHO certify India as free of smallpox in 1977.

### **Step 4:** Rule out the other years.

1965 was still early in the campaign, well before the disease was controlled. 1986 and 1995 come long after eradication was already certified, so they cannot be right.

### **Step 5:** Conclude.

1975

**Quick Tip:** Recall the year India reported its last smallpox case under the eradication drive.

...

178. 'DOTS' indicates

- (A) Long-term treatment under direct observation
- (B) Short-term treatment under direct observation
- (C) Short-term treatment without observation
- (D) Domiciliary treatment without observation

**Correct Answer:** (B) Short-term treatment under direct observation

**SOLUTION:**

**Step 1: Expand the short form.**

DOTS breaks down to Directly Observed Treatment, Short-course. Each word carries a rule of the strategy.

**Step 2: Unpack "short-course".**

The regimen is fixed at about 6 to 8 months, much shorter than the old 12 to 18 month TB treatments, thanks to combination drugs like rifampicin.

**Step 3: Unpack "directly observed".**

A trained worker watches the patient swallow every single dose in front of them. This stops patients from stopping early or missing doses, which is the main reason drug resistant TB develops.

**Step 4: Eliminate the other choices.**

A long course clashes with the word "short". Treatment without observation clashes with the word "directly observed". Home based dosing without a watcher also fails the observation part.

**Step 5: Conclude.**

|                                               |
|-----------------------------------------------|
| Short-term treatment under direct observation |
|-----------------------------------------------|

**Quick Tip:** DOTS expands to Directly Observed Treatment, Short-course.

• • •

**179.** Lymphogranuloma venereum is caused by

- (A) Haemophilus ducreyi
- (B) Donovanian granulomatis
- (C) Treponema pertenue
- (D) Chlamydia trachomatis

**Correct Answer:** (D) Chlamydia trachomatis

**SOLUTION:**

**Step 1:** Recall the four classic STI ulcers.

Medical exams often ask you to match four venereal ulcer diseases with their germs: syphilis, chancroid, granuloma inguinale and lymphogranuloma venereum.

**Step 2:** Fix LGV to its organism.

Lymphogranuloma venereum is caused by serovars L1 to L3 of Chlamydia trachomatis, giving a tiny painless ulcer followed by big, tender groin nodes.

**Step 3:** Separate it from the look alikes.

Haemophilus ducreyi gives chancroid, a soft and painful ulcer. Donovanian granulomatis gives granuloma inguinale, a beefy red ulcer that keeps growing. Treponema pertenue causes yaws, which is not even sexually spread.

**Step 4:** Conclude.

## Chlamydia trachomatis

**Quick Tip:** LGV is caused by specific serovars of Chlamydia trachomatis.

• • •

**180.** Which one of the following is NOT a characteristic of non-communicable disease?

- (A) Well-defined etiological agent
- (B) Multifactorial causation
- (C) Long latent period
- (D) Variable onset

**Correct Answer:** (A) Well-defined etiological agent

### SOLUTION:

**Step 1:** Set the two disease families side by side.

Communicable diseases spread from a single germ. Non-communicable diseases, like heart disease or diabetes, build up from many causes acting together.

**Step 2:** Test each option against NCDs.

Multifactorial causation fits NCDs well, since diet, genes, stress and habits all add up. A long gap between exposure and disease also fits, think of decades of smoking before cancer shows up. Onset can be slow or sudden in NCDs, so variable onset fits too.

**Step 3:** Spot the mismatch.

A single, well-defined agent is the signature of an infection, like a

specific bacterium causing a specific disease. NCDs do not have that one fixed cause.

**Step 4: Conclude.**

Well-defined etiological agent

**Quick Tip:** NCDs arise from many factors together, not one single fixed agent.

...

**181.** The number of live births per 1000 women in the reproductive age group in a year refers to

- (A) Total fertility rate
- (B) Gross Reproduction Rate
- (C) Net Reproduction Rate
- (D) General Fertility Rate

**Correct Answer:** (D) General Fertility Rate

**SOLUTION:**

**Step 1: Read the definition carefully.**

We need live births counted against women of reproductive age, per 1000, in one year. That specific denominator, women aged 15 to 49, is the clue.

**Step 2: Write the ratio.**

$$GFR = \frac{\text{live births in the year}}{\text{women aged 15-49}} \times 1000$$

This is exactly the General Fertility Rate.

**Step 3:** Rule out the sound alike terms.

Total Fertility Rate sums up age-specific rates to estimate children per woman over a lifetime, not an annual per-1000 figure. Gross Reproduction Rate only counts female babies. Net Reproduction Rate goes further and folds in the mother's survival chances. None of these match the plain "live births per 1000 women" wording.

**Step 4:** Conclude.

General Fertility Rate

**Quick Tip:** Match the denominator, women aged 15 to 49, to the correct fertility index.

...

**182.** With reference to lead poisoning, match List I (Agent) with List II (Amount) and select the correct answer using the codes given below the list.

| List I (Agent)                  | List II (Amount)   |
|---------------------------------|--------------------|
| A. Coproporphyrin in urine      | 1. > 70 mcg/100 ml |
| B. Aminolevulinic acid in urine | 2. > 5 mg/L        |
| C. Lead in urine                | 3. > 150 mcg/L     |
| D. Lead in blood                | 4. > 0.8 mg/L      |

- (A) A-1, B-2, C-4, D-3
- (B) A-3, B-4, C-2, D-1
- (C) A-1, B-4, C-2, D-3
- (D) A-3, B-2, C-4, D-1

**Correct Answer:** (D) A-3, B-2, C-4, D-1

**SOLUTION:**

**Step 1:** List the four markers.

We are matching four lead poisoning tests, coproporphyrin in urine, ALA in urine, lead in urine and blood lead, to four cut off values.

**Step 2:** Anchor on the value you know best.

Blood lead over 70 mcg/100 ml is the classic textbook alert value for lead toxicity. That fixes D to value 1.

**Step 3:** Work through the rest.

Urine lead crossing 0.8 mg/L signals heavy exposure, fixing C to value 4. Urinary ALA rising past 5 mg/L reflects blocked heme production, fixing B to value 2. That leaves urinary coproporphyrin above 150 mcg/L for A, fixing A to value 3.

**Step 4:** Match to the given codes.

A-3, B-2, C-4, D-1 is exactly the fourth code option listed in the question.

**Step 5:** Conclude.

|                    |
|--------------------|
| A-3, B-2, C-4, D-1 |
|--------------------|

**Quick Tip:** Blood lead above 70 mcg/100 ml is the classic lead poisoning cut-off; match the rest around it.

• • •

**183.** The minimum air space per worker prescribed by Indian Factory (Amendment) Act, 1987 is

- (A) 200 cu ft
- (B) 300 cu ft
- (C) 500 cu ft
- (D) 700 cu ft

**Correct Answer:** (C) 500 cu ft

**SOLUTION:**

**Step 1:** Know what the law is protecting.

Factories must give each worker enough room to breathe clean air and avoid crowding, so the law sets a minimum floor to ceiling volume per head.

**Step 2:** Recall the fixed number.

The Factories (Amendment) Act, 1987 set this at 14.2 cubic metres per worker, which converts to close to 500 cubic feet.

**Step 3:** Note the height rule.

Only space up to 4.2 metres above the floor counts toward this volume, so very tall rooms do not get credit for the extra height.

**Step 4:** Eliminate the other numbers.

200, 300 and 700 cubic feet do not match the legally fixed figure, so

only 500 cubic feet is right.

**Step 5:** Conclude.

500 cu ft

**Quick Tip:** The 1987 amendment fixed worker air space at about 14.2 cubic metres.

• • •

**184.** Amniocentesis to detect chromosomal abnormalities can be done as early as

- (A) 14th week of gestation
- (B) 18th week of gestation
- (C) 22nd week of gestation
- (D) 26th week of gestation

**Correct Answer:** (A) 14th week of gestation

**SOLUTION:**

**Step 1:** Think about what the test needs.

Amniocentesis pulls out a small sample of amniotic fluid and grows the fetal cells floating in it to study the chromosomes. This only works once there is enough fluid and enough cells.

**Step 2:** Place that point in the pregnancy.

That happens by about 14 weeks of gestation, marking the earliest point doctors consider the test workable.

**Step 3: Note the routine practice.**

In everyday practice, most units wait until 15 to 20 weeks, often 16 weeks, for a cleaner sample and lower risk, but the question asks for the earliest possible week, not the routine one.

**Step 4: Rule out the later options.**

18, 22 and 26 weeks are all past the earliest feasible point, so none of them answer "as early as".

**Step 5: Conclude.**

14<sup>th</sup> week of gestation

**Quick Tip:** Amniocentesis needs enough fluid and cells, available from around 14 weeks.

...

**185.** Haemophilia is a genetic disorder of coagulation seen only in males. It is transmitted as

- (A) X-linked dominant
- (B) Y-linked dominant
- (C) X-linked recessive
- (D) Autosomal recessive

**Correct Answer:** (C) X-linked recessive

**SOLUTION:**

**Step 1: Understanding the Concept.**

Look at how X and Y chromosomes are handed down and what

happens when only one copy of a gene is faulty.

**Step 2: Key Formula or Approach.**

If a single faulty copy on the X chromosome is enough to cause disease in a male, but a female needs the fault on both her X chromosomes, the gene follows X-linked recessive inheritance.

**Step 3: Detailed Explanation.**

Picture a mother who carries one faulty X and one normal X. She is healthy, since her normal X makes enough clotting factor. Each son gets one X from her and a Y from his father. If he happens to get her faulty X, he has no backup copy, so he bleeds easily and is diagnosed with haemophilia.

A daughter in the same family gets one X from her mother and one X from her father. Even if she gets the faulty X from her mother, her father usually gives her a normal X, so she becomes a carrier rather than a patient. This explains the classic family pattern seen in haemophilia, sons affected, daughters silent carriers, skipping generations through the maternal line.

If the gene acted as dominant, carrier mothers would also show bleeding, which is not seen. If it sat on the Y chromosome, disease would move only from father to son, with mothers playing no part, which again does not match. If it were autosomal recessive, sons and daughters would be affected in similar numbers, but haemophilia strongly favours males.

**Step 4: Final Answer.**

The inheritance fits an X-linked recessive pattern, so the answer is X-linked recessive.

**Quick Tip:** Work out what a male needs on his single X chromosome to be affected, compared to a female.

• • •

**186.** The pattern of inter-relations between persons in a society is called

- (A) Social stratification
- (B) Social structure
- (C) Caste system
- (D) Herd structure

**Correct Answer:** (B) Social structure

**SOLUTION:**

**Step 1: Understanding the Concept.**

The question wants a single word for how all the people in a society connect and relate to one another, not how they are ranked.

**Step 2: Key Formula or Approach.**

Sociologists use social structure for the whole web of roles, groups, and relationships in a society, while social stratification is used only for ranking people into layers.

**Step 3: Detailed Explanation.**

Social structure includes family ties, workplaces, schools, and other groups, along with how they connect to each other. This is the general pattern of relations the question is asking about.

Social stratification instead sorts people by wealth, power, or status into higher and lower layers. It answers a different question, who ranks above whom, not how people relate to each other.

Caste system is just one example of stratification found in Indian society and is far too specific to stand for the whole pattern of relations.

Herd structure belongs to animal grouping behavior, not to human sociology, so it can be ruled out right away.

**Step 4: Final Answer.**

The correct term for the pattern of inter-relations between persons in a society is social structure.

**Quick Tip:** Separate the idea of "how people rank" from the idea of "how people connect".

• • •

**187.** The most effective method for motivating a couple for adopting family planning practices is

- (A) Printed material
- (B) Films and television
- (C) Group discussion
- (D) Inter-personal communication

**Correct Answer:** (C) Group discussion

**SOLUTION:**

**Step 1: Understanding the Concept.**

Think about the difference between just telling someone a fact and actually helping them decide to act on it.

**Step 2: Key Formula or Approach.**

In health education, methods that involve two way interaction and group support are known to change behavior more strongly than methods that only pass on information.

**Step 3: Detailed Explanation.**

Posters and printed leaflets only give information in one direction. A couple may read about family planning and still not feel ready to use it, since no one is there to answer their doubts.

Films and television spread awareness to a huge number of people at once, but again this is a one way channel with no room for the couple to ask questions specific to their situation.

Group discussion works differently. Couples sit with others facing the same decision, share worries, hear success stories, and work through social hesitation together. This mix of information plus peer support and open questions is what actually pushes people from just knowing about family planning to accepting and using it.

Direct one to one talk with a worker is helpful too, but it lacks the peer influence that a group setting brings, which studies in health education repeatedly show as a strong motivator for practices like family planning.

**Step 4: Final Answer.**

Group discussion is judged the most effective method for motivating a couple toward family planning.

**Quick Tip:** Think about which method lets couples ask questions and hear other people's experience, not just receive information.



**188.** Which one of the following is an environmental factor associated with mental illness?

- (A) Emotional stress
- (B) Frustration
- (C) Broken home
- (D) Anxiety

**Correct Answer:** (C) Broken home

**SOLUTION:**

**Step 1: Understanding the Concept.**

Separate what happens inside a person's mind from what happens in the world around that person.

**Step 2: Key Formula or Approach.**

An environmental factor is a real circumstance in a person's surroundings, such as their home or community, while a psychological factor is a feeling or reaction happening within the mind.

**Step 3: Detailed Explanation.**

Emotional stress and frustration are both feelings that arise inside a person when life gets hard, so they count as psychological reactions, not environmental settings.

Anxiety is again an internal feeling of worry, which can be a symptom of illness rather than a cause sitting in the environment.

Broken home stands apart from the rest. It describes an actual life situation, a family disrupted by separation, divorce, death, or ongoing conflict, that a child or adult grows up in or lives through. Because this sits in the person's real surroundings and not just their mind, it is classed as an environmental risk factor for mental illness.

**Step 4: Final Answer.**

Among the options, broken home is the true environmental factor linked with mental illness.

**Quick Tip:** Ask which option describes a real life situation around the person, not a feeling inside them.

• • •

**189.** Which one of the following statements is NOT correct?

- (A) The graafian follicle after ovulation changes to corpus luteum.
- (B) Atretic follicles are formed after atrophy of corpus luteum.
- (C) Estradiol is formed from androgens in the ovarian follicle.
- (D) Follicular stimulating hormone (FSH) is necessary for the development of the granulosa layer.

**Correct Answer:** (B) Atretic follicles are formed after atrophy of corpus luteum.

**SOLUTION:**

**Step 1: Understanding the Concept.**

Walk through the life story of one ovarian follicle across a cycle and check each statement against that story.

**Step 2: Key Formula or Approach.**

Only one follicle each cycle usually reaches ovulation and becomes the corpus luteum. All the other growing follicles that do not ovulate shrink away through a separate, ongoing process called atresia, and this can happen at any point in their growth, not tied to what the

corpus luteum is doing.

**Step 3: Detailed Explanation.**

Saying the graafian follicle turns into the corpus luteum after ovulation is textbook correct, this is the normal fate of the ovulated follicle.

Saying FSH drives the growth of the granulosa cell layer is also textbook correct, this hormone works directly on those cells.

Saying estradiol comes from androgens inside the follicle matches the two cell model of the ovary, where one cell type supplies the androgen building block and another converts it into estrogen, so this statement holds up well too.

The statement that does not fit the real biology is the one connecting atretic follicles to the corpus luteum breaking down. Atresia is a fate for follicles that never ovulate at all, it happens throughout the cycle among the non selected follicles, and is a separate story from the corpus luteum's own decline into the corpus albicans.

**Step 4: Final Answer.**

"Atretic follicles are formed after atrophy of corpus luteum" is the statement that is NOT correct, since atresia is an independent, ongoing process unrelated to corpus luteum decline.

**Quick Tip:** Atresia happens to follicles that never reach ovulation at all, separate from what the corpus luteum is doing.

• • •

**190.** For the treatment of excessive bleeding in a case of DUB, which one of the following therapies used is termed as 'Medical Curettage'?

- (A) Combined estrogen progestogen pill
- (B) Danazol
- (C) High doses of progestogens
- (D) GnRH analogue

**Correct Answer:** (C) High doses of progestogens

**SOLUTION:**

**Step 1: Understanding the Concept.**

Think about which DUB therapy produces an effect that copies what a surgical curettage does, complete shedding of the uterine lining, without actually operating on the patient.

**Step 2: Key Formula or Approach.**

A surgical curettage scrapes away the whole endometrial lining at once. Any drug regimen that causes the same complete, one time shedding through hormone withdrawal is acting like a "medical" version of that same procedure.

**Step 3: Detailed Explanation.**

Combined pills work by giving steady cyclic hormones to regularize bleeding over time, not by causing one big shedding event, so this does not fit the curettage idea.

Danazol changes the hormone environment to shrink the endometrium gradually, again not matching a sudden, complete shed. Stopping a course of high dose progestogens causes the whole built up lining to shed together in one withdrawal bleed, very much like what a curette does mechanically. This is the reasoning behind calling high dose progestogen therapy "medical curettage" in gynaecology texts. A GnRH analogue instead switches off the ovary's hormone signal

from the brain, giving a low estrogen state that stops bleeding by starvation of hormone support rather than by one complete shed.

**Step 4: Final Answer.**

High dose progestogen therapy is the answer, since it is the regimen whose withdrawal produces the complete endometrial shed that earns it the "medical curettage" name.

**Quick Tip:** Ask which therapy makes the endometrium shed completely in one go, similar to what a curette does.

• • •

**191.** In patients of dysfunctional uterine bleeding, with secretory endometrium on histopathology, the initial treatment of choice would be

- (A) Oral contraceptives
- (B) Progestins
- (C) NSAIDs
- (D) Danazol

**Correct Answer:** (B) Progestins

**SOLUTION:**

**Step 1: Understanding the Concept.**

First work out what a secretory endometrium tells us about this patient's cycle, then match the treatment to that specific situation.

**Step 2: Key Formula or Approach.**

A secretory endometrium means ovulation has already happened and progesterone has acted on the lining. So this is ovulatory DUB,

different from the more common anovulatory DUB where the lining stays proliferative. Each type needs its own treatment.

**Step 3: Detailed Explanation.**

Combined oral contraceptives are built for anovulatory DUB, where estrogen keeps building the lining without progesterone ever balancing it. That is not this patient's picture, since her lining is already secretory.

In ovulatory DUB with a secretory pattern, the corpus luteum often does not support the lining well or for long enough, so the endometrium breaks down in a patchy, drawn out way instead of a clean single bleed. Progestins fill in this missing support, letting the lining shed together in one proper cycle, which is exactly why they are the initial choice here.

NSAIDs help lower prostaglandins and reduce blood flow, and they can be added on, but they do not correct the underlying progesterone support issue that this secretory pattern points to.

Danazol is a stronger, more side effect heavy drug kept for bleeding that does not settle with the simpler hormone options.

**Step 4: Final Answer.**

The best initial choice for DUB with a secretory endometrium is progestins.

**Quick Tip:** A secretory endometrium means ovulation already happened, so think about supporting the luteal phase.



**192.** Retroverted uterus detected in routine examination in gynaecological clinic can be managed as

- (A) Pessary treatment
- (B) Ventral suspension operation
- (C) Postural exercise
- (D) No treatment

**Correct Answer:** (A) Pessary treatment

**SOLUTION:**

**Step 1: Understanding the Concept.**

Notice the key detail in the question, this retroverted uterus was found on a routine check, with no mention of pain, backache, or any other complaint.

**Step 2: Key Formula or Approach.**

Retroversion of the uterus is common and, in most women, just a harmless variation in anatomy with a uterus that moves freely. This paper's answer key treats pessary treatment as correct for this scenario.

**Step 3: Detailed Explanation.**

A pessary is used to support a retroverted uterus, including cases picked up incidentally, and is the answer marked correct in this source.

Ventral suspension surgery is an even bigger step, reserved for long standing symptoms that have already failed conservative care, so it clearly does not fit as well here.

Postural exercises can help a mobile retroverted uterus reposition itself when there are mild symptoms.

Many current textbooks would instead favor no treatment and reassurance for a mobile, asymptomatic, incidentally found

retroverted uterus, since most behave as a normal anatomical variant.

**Step 4: Final Answer.**

Following this paper's answer key, pessary treatment is the marked answer, though modern teaching often favors no treatment for this exact scenario.

**Quick Tip:** Notice there are no symptoms described, just a routine finding.

• • •

**193.** The commonest organism responsible for Bartholin abscess is

- (A) *Treponema pallidum*
- (B) *Trichomonas vaginalis*
- (C) *Neisseria gonorrhoeae*
- (D) Lymphogranuloma venereum

**Correct Answer:** (C) *Neisseria gonorrhoeae*

**SOLUTION:**

A Bartholin abscess forms when the duct of the Bartholin gland, tucked in the back part of the labium majus, gets blocked and the trapped fluid becomes infected. The question wants the germ most often behind that infection.

1. ***Treponema pallidum*:** this bacterium causes syphilis, seen as a painless ulcer on the genitals, not a swollen infected gland.
2. ***Trichomonas vaginalis*:** a protozoan parasite that gives a frothy discharge and vaginal itching, unrelated to gland abscesses.

3. **Neisseria gonorrhoeae**: this gonococcus is well known to infect the Bartholin duct and gland, and it is the organism most often quoted as the cause of Bartholin abscess.
4. **Lymphogranuloma venereum**: caused by certain strains of Chlamydia trachomatis, it produces tender groin lymph nodes, not a Bartholin gland abscess.

Since the gonococcus is the organism most closely tied to Bartholin duct infection in standard teaching, it is accepted as the commonest cause of Bartholin abscess.

Let's summarize:

- Bartholin abscess is treated like a sexually transmitted infection because of where the gland sits.
- Neisseria gonorrhoeae is the classic organism linked to it, ahead of syphilis, trichomoniasis, or LGV.

So the answer is Neisseria gonorrhoeae.

**Quick Tip:** Think of the organism most linked to STIs affecting the vulvovaginal glands.

• • •

**194.** Increased LH : FSH ratio is found in

- (A) Premature menopause
- (B) Sheehan syndrome
- (C) Polycystic ovary syndrome
- (D) Turner's syndrome

**Correct Answer:** (C) Polycystic ovary syndrome

## SOLUTION:

This question is about a hormone ratio: which condition among the four raises LH above FSH rather than the other way round.

1. **Premature menopause:** the ovaries stop working early, inhibin B falls sharply, and the pituitary responds by pushing FSH up more than LH. That gives a high FSH:LH ratio, the opposite of what the question asks.
2. **Sheehan syndrome:** this is pituitary failure after heavy blood loss during childbirth. Both LH and FSH drop because the gland making them is damaged, so neither hormone is raised.
3. **Polycystic ovary syndrome:** here the ovaries work but the brain sends GnRH pulses in a fast pattern that favors LH secretion. LH climbs while FSH stays low or normal, so the LH:FSH ratio goes up, often past 2:1 or even 3:1.
4. **Turner's syndrome:** the ovaries are streaks that barely function, so like premature menopause, inhibin B is very low and FSH rises more than LH, again a high FSH:LH pattern, not high LH:FSH.

Only PCOS matches a raised LH:FSH ratio, since the other three conditions either lower both hormones or raise FSH ahead of LH. The paper's printed key marks Turner's syndrome, but that pairs with a high FSH:LH ratio, so on medical grounds the answer here is corrected to PCOS.

Let's summarize:

- Ovarian failure states (premature menopause, Turner's syndrome) raise FSH more than LH.
- Sheehan syndrome lowers both hormones.

- PCOS is the one condition where LH outruns FSH, giving the classic raised LH:FSH ratio.

So the corrected answer is polycystic ovary syndrome.

**Quick Tip:** Ask which condition raises LH more than FSH, not the other way round.

• • •

**195.** Which of the following statements about definition of Hirsutism is correct?

- (A) Hirsutism is excessive facial hair.
- (B) Hirsutism is excessive distribution of facial and body hair in a female distribution pattern.
- (C) Hirsutism is excessive distribution of facial and body hair in a male distribution pattern.
- (D) Hirsutism is excessive distribution of body hair.

**Correct Answer:** (C) Hirsutism is excessive distribution of facial and body hair in a male distribution pattern.

**SOLUTION:**

The question checks whether we know the precise definition of hirsutism, since students often confuse it with simply having "too much hair".

1. **Excessive facial hair:** this only covers the face and leaves out chest, back, and lower belly hair that hirsutism also involves, so it is too narrow.

2. **Excessive hair in a female pattern:** normal female pattern hair, even if thick, on the scalp, eyebrows, or underarms is not hirsutism, so this definition is wrong.
3. **Excessive hair in a male pattern:** hirsutism specifically means terminal hair growth in androgen sensitive areas that normally grow hair only in men, like the upper lip, chin, chest, and lower abdomen, in a woman. This matches the medical definition exactly.
4. **Excessive body hair:** extra hair everywhere on the body without following a male pattern is called hypertrichosis, a separate entity with different causes such as drugs or a general growth of fine hair, not androgen excess.

The correct definition ties hirsutism to a male hair pattern in a woman, driven by androgen action on hair follicles, which rules out the other three choices.

Let's summarize:

- Hirsutism is male pattern terminal hair growth in a woman, not just "more hair".
- Generalized extra hair without a male pattern is hypertrichosis, a different problem.

So the correct statement is that hirsutism is excessive facial and body hair in a male distribution pattern.

**Quick Tip:** The definition hinges on the word "pattern", not just the amount of hair.



196. Complete perineal tear is common in

- (A) Face to pubes delivery
- (B) Breech delivery
- (C) Internal podalic version
- (D) Manual removal of placenta

**Correct Answer:** (A) Face to pubes delivery

**SOLUTION:**

A complete perineal tear cuts through the anal sphincter and sometimes the rectal wall. The question wants the delivery scenario that most often produces this severe injury.

1. **Face to pubes delivery:** here the baby is born face first, in a persistent occipito posterior position, presenting the mento vertical diameter. This diameter is much wider than the usual diameter in a normal delivery, so it overstretches the perineum and is the classic setup for a complete tear.
2. **Breech delivery:** the aftercoming head can be a concern, but with careful technique this is not the standard cause of complete perineal tears compared with face to pubes birth.
3. **Internal podalic version:** this is a manoeuvre to turn a baby into breech, usually for a second twin, and does not by itself explain a complete perineal tear.
4. **Manual removal of placenta:** this happens after delivery of the baby is already finished, so it plays no role in perineal stretching during birth of the head.

Since the wide mento vertical diameter of a face to pubes delivery puts the most direct strain on the perineum, it is the setting most linked with complete perineal tears.

Let's summarize:

- A wider presenting diameter through the vulva raises the risk of severe perineal tears.
- Face to pubes delivery, from persistent occipito posterior position, gives the widest such diameter among the options.

So the answer is face to pubes delivery.

**Quick Tip:** Think about which delivery presents the widest diameter through the vulva.

• • •

**197.** Young women whose mothers took diethylstilbestrol during pregnancy are likely to develop one of the following genital malignancy

- (A) Squamous-cell carcinoma
- (B) Adenosquamous carcinoma
- (C) Papillary adenocarcinoma
- (D) Clear-cell adenocarcinoma

**Correct Answer:** (D) Clear-cell adenocarcinoma

**SOLUTION:**

Diethylstilbestrol, or DES, is a synthetic hormone that doctors once gave to pregnant women hoping to prevent miscarriage. Its use came with a hidden cost for the daughters born from those pregnancies, and the question asks what cancer that cost turned out to be.

1. **Squamous cell carcinoma:** this is the usual type of cervical cancer in the general population and is linked to persistent high risk HPV infection, not to a mother's DES use.

2. **Adenosquamous carcinoma:** a mixed tumor pattern that is not the one historically tied to DES daughters.
3. **Papillary adenocarcinoma:** not the cancer type reported in this exposed group either.
4. **Clear cell adenocarcinoma:** DES exposure before birth leaves behind patches of glandular tissue in the vagina called adenosis, and it was cancer arising from these patches, specifically clear cell adenocarcinoma, that alerted doctors in the 1970s to the danger of DES.

Since clear cell adenocarcinoma of the vagina and cervix is the cancer that was actually traced back to prenatal DES exposure, it stands apart from the other three options.

Let's summarize:

- DES exposure in the womb causes vaginal adenosis in daughters.
- Cancer arising from that adenosis, clear cell adenocarcinoma, is the malignancy tied to DES.

So the answer is clear cell adenocarcinoma.

**Quick Tip:** Recall which rare vaginal cancer was first traced back to a drug given to pregnant mothers.

• • •

**198.** In carcinoma cervix, the causative etiological factor is

- (A) Condyloma acuminata
- (B) HPV 16,18
- (C) HPV 6,11
- (D) HSV 1 and 2

**Correct Answer:** (B) HPV 16,18

**SOLUTION:**

The question is really asking which infection actually drives cervical cancer, as opposed to something that just happens to affect the genital tract.

1. **Condyloma acuminata:** these genital warts are caused by HPV too, but they are benign lesions, not the cancer causing process by themselves.
2. **HPV 16, 18:** these are the high risk, oncogenic HPV types. Their proteins knock out the cell's tumor suppressor defenses, which lets cervical cells accumulate damage and turn cancerous over years.
3. **HPV 6, 11:** these are low risk types that cause genital warts but almost never lead to cancer.
4. **HSV 1 and 2:** herpes simplex virus was studied as a possible cofactor decades ago, but it was never confirmed as the cause, and current evidence points squarely at high risk HPV instead.

Since only the high risk HPV types disable the cell's tumor suppressor machinery and drive the cancer process, they are the accepted etiological factor for cervical cancer.

Let's summarize:

- Low risk HPV (6, 11) causes warts, not cancer.
- High risk HPV (16, 18) is the confirmed cause of cervical cancer.

So the answer is HPV 16, 18.

**Quick Tip:** Separate the wart causing HPV types from the cancer causing ones.

• • •

**199.** Which one of the following is the most common extrauterine site to be affected by endometriosis?

- (A) Vagina
- (B) Rectovaginal septum
- (C) Sigmoid colon
- (D) Broad ligament (except tubes and ovaries)

**Correct Answer:** (B) Rectovaginal septum

**SOLUTION:**

Endometriosis is the growth of tissue like the uterine lining in places outside the uterus. The ovary tops the list of common sites, but it is not one of the four choices given, so we need the most frequent site among vagina, rectovaginal septum, sigmoid colon, and broad ligament.

1. **Vagina:** true vaginal involvement is uncommon and usually happens only when disease spreads there from a nearby structure.
2. **Rectovaginal septum:** this tissue plane between the vagina and rectum is one of the most frequently affected areas outside the ovary, often producing firm, tender nodules that a doctor can feel on examination.
3. **Sigmoid colon:** bowel involvement does occur because the sigmoid colon sits close to the pelvic organs, but it is less common

than involvement of structures nearer the uterus, such as the rectovaginal septum.

4. **Broad ligament (except tubes and ovaries):** the broad ligament itself can carry implants, but surgical series find this less often than septal or ligament disease closer to the cervix.

Putting these together, the rectovaginal septum ranks highest among the four given choices for how often it is involved by endometriosis.

Let's summarize:

- The original paper left this answer blank, so the choice here rests on standard gynaecology teaching about site frequency.
- Among the options given, the rectovaginal septum is the most commonly affected extrauterine site.

So the corrected answer is rectovaginal septum.

**Quick Tip:** The ovary is the top site overall but is not an option here, so look for the next most frequent one.

• • •

**200.** The first evidence of pubertal development in the female is

- (A) Appearance of breast buds.
- (B) Onset of menarche
- (C) Appearance of axillary hair
- (D) Appearance of pubic hair

**Correct Answer:** (A) Appearance of breast buds.

**SOLUTION:**

Puberty in girls unfolds in a set order, and this question checks whether we know which milestone comes first in that sequence.

1. **Appearance of breast buds:** rising estrogen from the ovary causes the breast tissue to bud, and this is the earliest outward sign of puberty in most girls, known as thelarche.
2. **Onset of menarche:** the first period is actually one of the last milestones of puberty, coming well after breast development, hair growth, and the growth spurt, so it cannot be the first sign.
3. **Appearance of axillary hair:** underarm hair growth generally follows breast budding and pubic hair growth, placing it later in the sequence, not first.
4. **Appearance of pubic hair:** pubarche starts close to the time of breast budding but usually just after it, driven by adrenal and ovarian androgens, so it trails thelarche slightly.

Since thelarche is the event that estrogen triggers earliest in the pubertal sequence, breast budding is the first visible sign of puberty in girls.

Let's summarize:

- The order of puberty in girls is breast budding, then pubic and axillary hair, then growth spurt, then menarche last.
- Breast budding (thelarche) is the earliest of these milestones.

So the answer is appearance of breast buds.

**Quick Tip:** Remember the order: breast budding comes before hair growth and periods.



**201.** Which one of the following is the most common problem associated with the use of condom?

- (A) Increased monilial infection of vagina
- (B) Premature ejaculation
- (C) Contact dermatitis
- (D) Retention of urine

**Correct Answer:** (C) Contact dermatitis

**SOLUTION:**

**Step 1: Understanding the Concept:**

Every contraceptive method has its own typical complaint. For a barrier method like the condom, problems are almost always local and mechanical, tied to the material against the skin.

**Step 2: Key Formula or Approach:**

Rule out the systemic or unrelated options first, then pick the one problem that is truly tied to wearing the condom.

**Step 3: Detailed Explanation:**

Vaginal monilial infection is driven mainly by things like diabetes, antibiotics, or a warm moist environment, not by condom use.

Premature ejaculation has its own psychological and physical causes and is not caused by condoms as a rule.

Retention of urine has no medical link to condom use.

A contact reaction of the skin from the latex or the lubricant/spermicide coating, however, is reported often enough to be called the classic complaint of condom users.

**Step 4: Final Answer:**

Contact dermatitis is the answer, matching option (C).

**Quick Tip:** Think of a local skin reaction to the condom material, not a systemic effect.

• • •

**202.** Which one of the following intrauterine contraceptive devices has the lowest pregnancy rate?

- (A) Lippes' loop
- (B) Cu-7
- (C) Cu T-200
- (D) Levonorgestrel IUD

**Correct Answer:** (B) Cu-7

**SOLUTION:**

**Step 1: Understanding the Concept:**

An IUCD's failure rate is really about how much it disturbs the lining of the uterus and how well it stays put once placed.

**Step 2: Key Formula or Approach:**

Look at each device's copper content and shape, since more copper in a stable frame usually means a lower failure rate among these four choices.

**Step 3: Detailed Explanation:**

Lippes' loop has no copper and depends only on its plastic frame, giving it a comparatively higher pregnancy rate.

Cu T-200 carries 200 mm<sup>2</sup> of copper on a T shaped frame, but its rate is still placed higher than a well fitted copper device such as Cu-7 in this comparison.

The levonorgestrel IUD acts through a hormonal route rather than copper, and while newer hormone releasing devices are known today for very low failure rates, this classic teaching question still credits Cu-7 with the lowest rate among the four listed devices.

**Step 4: Final Answer:**

Cu-7 is taken as the answer, option (B).

**Quick Tip:** This asks for the classic textbook ranking of copper IUCDs, not the newest hormonal device.

• • •

**203.** A primipara with a cardiac lesion (MI) has come on the 40th day of delivery asking for contraception. The contraceptive of choice is

- (A) Condom with spermicidal jelly
- (B) Oral contraceptive pill
- (C) Intrauterine contraceptive device
- (D) Laparoscopic sterilization

**Correct Answer:** (A) Condom with spermicidal jelly

**SOLUTION:**

**Step 1: Understanding the Concept:**

A woman with a heart valve problem needs a contraceptive that does not add any extra load on her heart, whether through clotting risk, infection risk, or the stress of surgery.

**Step 2: Key Formula or Approach:**

Go through each method and ask if it adds a hormonal, infective, or surgical risk to a heart patient so soon after childbirth.

**Step 3: Detailed Explanation:**

The pill's estrogen component raises clot risk, which is unwanted in a heart patient.

An IUCD can trigger a vasovagal response or infection at insertion, both unwelcome risks this early postpartum.

Tubal ligation by laparoscopy needs anaesthesia and gas distension of the abdomen, both a strain on a compromised heart, and can wait until she is more stable.

A condom used along with spermicidal jelly needs no drugs, no surgery, and no instruments, so it places no extra burden on the heart at all.

**Step 4: Final Answer:**

The safest choice here is a condom with spermicidal jelly, option (A).

**Quick Tip:** Pick the method with no hormonal, surgical, or instrumentation risk for a cardiac patient.

...

**204.**

Match List I (Type of Pill) with List II (Effect) and select the correct answer using the codes given below the lists.

| List I                      | List II                                           |
|-----------------------------|---------------------------------------------------|
| A. Triphasic                | 1. Prevention of ovarian tumours                  |
| B. DMPA                     | 2. Good for women having hypomenorrhoea           |
| C. Biphasic pill            | 3. Amenorrhoea is common                          |
| D. Progestin containing IUD | 4. Beneficial effect on high density lipoproteins |
|                             | 5. Chance of ectopic pregnancy                    |

- (A) A-4, B-3, C-1, D-5  
(B) A-4, B-1, C-3, D-5  
(C) A-5, B-4, C-2, D-1  
(D) A-5, B-3, C-4, D-2

**Correct Answer:** (A) A-4, B-3, C-1, D-5

**SOLUTION:**

This question tests recall of one key fact tied to each hormonal method in List I, then asks us to line those facts up with List II, where one entry is a decoy that never gets used.

1. **A. Triphasic:** These pills change the hormone dose through the cycle, which keeps the total dose lower and gives a better lipid profile, so they help raise high density lipoproteins. That is item 4.
2. **B. DMPA:** This injectable progestin is famous for making periods irregular at first and then stopping them with continued

use, so amenorrhoea being common (item 3) is its signature effect.

3. **C. Biphasic pill:** Like other combined pills, long-term use lowers the chance of ovarian tumours, so item 1 belongs here.

4. **D. Progestin containing IUD:** Because it works locally in the uterus rather than stopping ovulation reliably, any pregnancy that does occur with it has a higher chance of being ectopic, which is item 5.

Item 2, about hypomenorrhoea, is not needed for the correct combination and is only there to test if we pick pairs carefully. Lining up the real matches gives A-4, B-3, C-1, D-5, which is code (a).

Let's summarize:

- Triphasic pills favour the lipid profile (HDL).
- DMPA is linked with amenorrhoea on continued use.
- Combined/biphasic pills cut ovarian tumour risk.
- Progestin-only IUDs carry a higher relative ectopic risk if the device fails.

So the correct code is A-4, B-3, C-1, D-5, option (A).

**Quick Tip:** Match each method to its one standout pharmacological effect; one List II item is a distractor.

• • •

**205.** Which one of the following hormonal contraceptives CANNOT be used during lactation?

- (A) Mini-pill
- (B) Norplant
- (C) DMPA
- (D) Combined oral contraceptives

**Correct Answer:** (D) Combined oral contraceptives

**SOLUTION:**

**Step 1: Understanding the Concept:**

Breastfeeding mothers need a contraceptive that will not cut down their milk supply.

**Step 2: Key Formula or Approach:**

Split the options by hormone type: progestin-only methods spare the milk supply, while any method with estrogen reduces it.

**Step 3: Detailed Explanation:**

The mini-pill, Norplant, and DMPA all deliver progestin alone, and none of them cuts down milk volume, so a nursing mother can use any of these three safely.

Combined oral contraceptives, on the other hand, add estrogen to the mix, and estrogen is known to suppress milk production, making this method unsuitable for a breastfeeding mother.

**Step 4: Final Answer:**

Combined oral contraceptives are the answer, option (D).

**Quick Tip:** Estrogen reduces milk supply; progestin-only methods do not.



**206.** Third generation oral contraceptive pills containing norgestrel and gestodene along with estrogens

- (A) Are more lipid friendly
- (B) Decrease the risk of venous thromboembolism
- (C) Increase the risk of break through bleeding
- (D) Are not used for emergency contraception

**Correct Answer:** (A) Are more lipid friendly

**SOLUTION:**

**Step 1: Understanding the Concept:**

Progestins used in the pill have changed generation by generation, becoming less androgenic (less male hormone-like) with each newer type.

**Step 2: Key Formula or Approach:**

Lower androgenic activity in a progestin generally helps the lipid profile but does not lower clotting risk; in fact clotting risk goes up slightly with these newer progestins.

**Step 3: Detailed Explanation:**

Being less androgenic, third generation pills raise good cholesterol (HDL) and are kinder to the lipid profile overall, so calling them lipid friendly is accurate.

Their venous thromboembolism risk is actually a little higher than with second generation pills, not lower, so that option does not hold.

Breakthrough bleeding is not their hallmark feature either.

They are also used in some emergency contraception regimens, so saying they cannot be used for that purpose is wrong.

**Step 4: Final Answer:**

The correct property is that they are more lipid friendly, option (A).

**Quick Tip:** Less androgenic progestins improve the lipid profile but slightly raise clot risk.

• • •

**207.** Which part of the tube is ligated while doing female sterilization by Pomeroy's technique?

- (A) Ampullary
- (B) Isthmo-ampullary
- (C) Interstitial
- (D) Isthmic

**Correct Answer:** (B) Isthmo-ampullary

**SOLUTION:****Step 1: Understanding the Concept:**

Pomeroy's method is a classic way of tying off the fallopian tubes for permanent contraception, and it depends on picking up a loop of tube that is easy to reach and handle.

**Step 2: Key Formula or Approach:**

Think about which part of the tube is mobile enough to be lifted into a loop, tied at its base with catgut, and cut off, all through a small incision just above the pubic bone.

**Step 3: Detailed Explanation:**

The interstitial segment sits inside the uterine wall itself and simply

cannot be lifted into a loop, so it is ruled out.

The far ampullary end, near the fimbriae, is thinner and sits further away, making it an awkward choice for this technique.

The mobile mid-portion of the tube, at the isthmo-ampullary junction, is the segment that is classically brought up, looped, tied, and excised in Pomeroy's technique, since it lies close to the usual incision and is easy to handle.

**Step 4: Final Answer:**

The isthmo-ampullary segment is ligated, matching option (B).

**Quick Tip:** Pomeroy's loop is taken from the mobile mid-portion of the tube, easiest to bring up through a small incision.

• • •

**208.** The following statements are true regarding sterilization by Pomeroy's method, EXCEPT

- (A) It is performed with non-absorbable suture material
- (B) It does not include crushing of fallopian tube
- (C) It has a higher failure rate if performed at the time of caesarean section
- (D) It has a failure rate of about 0.1-0.4%

**Correct Answer:** (A) It is performed with non-absorbable suture material ; (C) It has a higher failure rate if performed at the time of caesarean section

**SOLUTION:**

This EXCEPT question wants us to spot the statement(s) about Pomeroy's sterilization that do not hold true, out of four claims.

1. **Non-absorbable suture material:** Pomeroy's whole design rests on using an absorbable suture, usually plain catgut, so the tied ends separate as the suture dissolves and heal apart on their own, cutting down the chance of the tube rejoining. Calling the suture non-absorbable goes against this design, so this claim is false.
2. **No crushing of the tube:** True. The technique only loops, ties, and cuts the tube; it never crushes the base, which is what sets it apart from a method like Madlener's that does crush without excising.
3. **Higher failure rate at caesarean section:** False. The low quoted failure rate of Pomeroy's technique, about 0.1 to 0.4%, is the same figure used whether it is done as an interval procedure or along with a caesarean section; the timing is not described as raising its failure rate.
4. **Failure rate of about 0.1-0.4%:** True, and this is the standard number quoted for this method.

Let's summarize:

- Pomeroy's method uses an absorbable suture, not a non-absorbable one.
- It does not crush the tube.
- Its low failure rate holds regardless of whether it is done at caesarean section or as an interval procedure.

So the two false statements, and the answer to this EXCEPT question, are options (A) and (C).

**Quick Tip:** Pomeroy's method is defined by an absorbable suture and a consistently low failure rate; check which statements contradict that.

• • •

**209.** Medical Termination of Pregnancy Act was passed by the Parliament of India in

- (A) 1950
- (B) 1965
- (C) 1971
- (D) 1981

**Correct Answer:** (C) 1971

**SOLUTION:**

This question asks for the year the Indian Parliament passed the law that legally allows termination of pregnancy under set medical conditions.

1. **1950:** At this time India had no dedicated abortion law. Abortion was a criminal act under the old penal code unless done to save the mother's life. Too early to be the answer.
2. **1965:** The push for a liberal abortion law came only after a government committee studied the high toll of unsafe abortions, and that report was not ready by this year.
3. **1971:** Parliament passed the Medical Termination of Pregnancy Act this year, following the recommendations of the Shantilal Shah Committee. It took effect from 1972 across most of the country.

4. **1981:** The Act had already been in force for nearly a decade by this point, so this year comes too late.

The correct year is 1971, when the MTP Act was passed by the Parliament of India.

Let's summarize:

- The MTP Act replaced the old penal provisions that treated abortion purely as a crime.
- It was passed in 1971 and enforced from April 1972.

So the answer is 1971.

**Quick Tip:** Think of the year right after the Shantilal Shah Committee report on unsafe abortions.

• • •

**210.** Gas preferred for creating pneumoperitoneum during laparoscopy is

- (A) Carbon dioxide
- (B) Oxygen
- (C) Air
- (D) Nitrous oxide

**Correct Answer:** (A) Carbon dioxide

**SOLUTION:**

Pneumoperitoneum means filling the abdominal cavity with gas so the surgeon gets room to work during laparoscopy. The question asks which gas is used for this.

1. **Carbon dioxide:** It does not burn, so it is safe near the electric cautery used in surgery. It also dissolves readily in blood, so if a little gets into a vessel by mistake the body clears it quickly. This is why it is the standard gas.
2. **Oxygen:** This gas actively supports burning, so using it next to cautery sparks risks a fire or explosion inside the patient. It is never used for this purpose.
3. **Air:** Air is mostly nitrogen and oxygen. Nitrogen barely dissolves in blood, so an accidental gas embolism with air is more dangerous and clears far more slowly than one with carbon dioxide.
4. **Nitrous oxide:** Though it does not burn on its own, it can support combustion when mixed with other surgical gases, so it is avoided as well.

Carbon dioxide is chosen because it is non-flammable and dissolves fast in blood, making it the safest option of the four.

Let's summarize:

- Non-flammable and highly blood soluble gases are safest for pneumoperitoneum.
- Oxygen, air, and nitrous oxide all fail one of these two requirements.

So carbon dioxide is the answer.

**Quick Tip:** Pick the gas that will not catch fire near the cautery and dissolves fast in blood if it leaks in.



**211.** Which one of the following statements is NOT correct?

- (A) Unfractionated Heparin does not cross the placenta.
- (B) Low molecular weight Heparins can cross the placenta.
- (C) Warfarin crosses the placenta.
- (D) Breast feeding is safe for the infant of a mother taking Warfarin.

**Correct Answer:** (B) Low molecular weight Heparins can cross the placenta.

**SOLUTION:**

The question tests which fact about heparin, warfarin, and the placenta is false. The rule to remember is that big charged drug molecules stay out of the fetal side, while small ones pass through freely.

1. **Unfractionated Heparin does not cross the placenta:**  
True. Its large size and strong negative charge block it from crossing, which is why it is a first choice anticoagulant during pregnancy.
2. **Low molecular weight Heparins can cross the placenta:**  
False. Even though these are shorter chains than unfractionated heparin, they remain large charged molecules and do not cross the placenta in practice.
3. **Warfarin crosses the placenta:** True. It is small and fat soluble, so it passes freely into the fetal circulation and can harm the developing fetus, especially in the first trimester.
4. **Breast feeding is safe for the infant of a mother taking Warfarin:** True. Warfarin sticks tightly to proteins in the mother's plasma, so very little reaches the breast milk, making breastfeeding safe.

Since three of the statements are medically accurate and only the claim about low molecular weight heparin crossing the placenta is wrong, that is the incorrect statement asked for.

Let's summarize:

- Both unfractionated and low molecular weight heparin are placenta safe.
- Warfarin crosses the placenta but is still safe during breastfeeding.

So the statement that is not correct is that low molecular weight heparins can cross the placenta.

**Quick Tip:** Both forms of heparin are too large and charged to cross the placenta, only warfarin does.

• • •

**212.** A 3-year old child develops severe dehydration following acute gastroenteritis. Investigations show blood urea 60mg/dl, pH 7.27, base excess -10 mEq/L, sodium 134 Eq/L and potassium 3.8 mEq/L. The most appropriate fluid for initial treatment of this child is

- (A) N/3 saline in 5% dextrose
- (B) N/3 saline in 10% dextrose
- (C) Normal saline with 5% dextrose
- (D) 3% saline

**Correct Answer:** (C) Normal saline with 5% dextrose

**SOLUTION:**

This child has severe dehydration from gastroenteritis, with a raised blood urea, a clear metabolic acidosis, and only mildly low sodium. The question is which fluid to start with.

1. **N/3 saline in 5% dextrose:** This is a hypotonic maintenance fluid. In severe dehydration the priority is to expand blood volume fast, and a fluid this dilute leaks out of the vessels too easily to do that job well.
2. **N/3 saline in 10% dextrose:** Same problem as above with the sodium strength, and the extra dextrose does not help correct the volume deficit either. Not suited for initial resuscitation.
3. **Normal saline with 5% dextrose:** Normal saline is isotonic and stays in the blood vessels, which quickly restores circulating volume and improves perfusion. The added dextrose covers calorie needs and guards against low blood sugar in a sick child. This fits the initial resuscitation need.
4. **3% saline:** A strong hypertonic fluid used only for dangerously low sodium with symptoms like seizures. This child's sodium of 134 mEq/L is only mildly low, so this fluid is not needed and could cause harm.

Restoring volume with an isotonic fluid comes first in severe dehydration, and normal saline with 5% dextrose does exactly that while also correcting the acidosis indirectly by improving perfusion.

Let's summarize:

- Severe dehydration needs isotonic fluid first, not hypotonic maintenance fluid.
- Hypertonic saline is reserved for severe symptomatic hyponatremia, which is not present here.

So normal saline with 5% dextrose is the correct initial fluid.

**Quick Tip:** Severe dehydration with acidosis first needs a fluid that stays in the blood vessels and restores volume quickly.

• • •

**213.** Duchenne muscular dystrophy is characterized by the following, EXCEPT

- (A) Most common hereditary neuro-muscular disease
- (B) Both boys and girls are equally affected
- (C) Pseudohypertrophy of calves and thigh muscles
- (D) High serum creatinine phosphokinase levels

**Correct Answer:** (B) Both boys and girls are equally affected

**SOLUTION:**

Duchenne muscular dystrophy comes from a mutation in the dystrophin gene on the X chromosome, and its inheritance pattern decides who gets the disease. The question asks which listed feature does not belong.

1. **Most common hereditary neuro-muscular disease:** True. It is the most common inherited muscle disease seen in children, so this is a real feature, not the exception.
2. **Both boys and girls are equally affected:** False. Since the faulty gene sits on the X chromosome and is recessive, boys with only one X chromosome show the full disease, while girls with two X chromosomes are usually just silent carriers. The disease is overwhelmingly a boys' disease, so this claim is wrong.

**3. Pseudohypertrophy of calves and thigh muscles:** True.

Muscle tissue is replaced by fat and fibrous tissue as fibers die, which makes the calves look bulky even as true muscle strength falls. This is a hallmark sign.

**4. High serum creatinine phosphokinase levels:** True.

Damaged muscle fibers leak this enzyme into the blood in large quantities, giving very high readings, particularly in the early stage of the disease.

Only the claim about equal involvement of boys and girls goes against the X-linked recessive inheritance of this disease, so that is the exception being asked for.

Let's summarize:

- X-linked recessive inheritance means boys are affected and girls are usually carriers.
- Pseudohypertrophy and a very high creatine phosphokinase are true, expected features.

So the exception is that both boys and girls are equally affected.

**Quick Tip:** Remember the X-linked recessive pattern, this disease mainly affects boys.



**214.** Consider the following clinicopathological changes in Rheumatic Carditis:

1. Mitral regurgitation
2. Aortic regurgitation
3. Rise in ASLO Titre
4. Left atrial hypertrophy

The correct chronological sequence of these changes would be

- (A) 3, 1, 2, 4
- (B) 1, 2, 3, 4
- (C) 4, 2, 1, 3
- (D) 3, 4, 1, 2

**Correct Answer:** (A) 3, 1, 2, 4

**SOLUTION:**

Rheumatic carditis unfolds as a chain reaction that starts with an immune response and ends with structural changes in the heart. The question wants the correct time order of four changes.

1. **Rise in ASLO Titre:** This is the body's antibody response to a recent streptococcal throat infection, and it shows up first, within one to three weeks of the infection, before any heart damage appears.
2. **Mitral regurgitation:** The same antibodies attack the heart valves through molecular mimicry, and the mitral valve is hit earliest and hardest, so leakage here comes right after the ASLO rise.
3. **Aortic regurgitation:** The inflammatory process then spreads to the aortic valve, so this leak develops after the mitral valve is already affected.

4. **Left atrial hypertrophy:** Blood leaking back through the damaged mitral valve overloads the left atrium over time, and the chamber responds by enlarging. This structural change is the last step, appearing only after the valve damage has been present a while.

Putting these four events on a timeline from the earliest immune marker to the latest structural change gives the order ASLO rise, mitral regurgitation, aortic regurgitation, left atrial hypertrophy, which is 3, 1, 2, 4.

Let's summarize:

- ASLO titre rise comes from the streptococcal infection and appears before any valve damage.
- Mitral valve damage precedes aortic valve damage, and chamber hypertrophy is the final, downstream effect.

So the correct sequence is 3, 1, 2, 4.

**Quick Tip:** Think of the immune marker first, then the valve most often hit first, then the second valve, then the chamber that enlarges from the backflow.

• • •

**215.** Which one of the following diseases is NOT developed by intrauterine growth retarded full term Low Birth Weight infants in later life?

- (A) Coronary heart disease
- (B) Hypertension
- (C) Diabetes
- (D) Malabsorption syndrome

**Correct Answer:** (D) Malabsorption syndrome

**SOLUTION:**

This question is built on the fetal origins of adult disease idea, also called the Barker hypothesis, which says that a baby who grows poorly in the womb but is still born at full term carries a higher risk of certain adult diseases.

1. **Coronary heart disease:** Long-term studies of such low birth weight babies show a raised risk of this in adulthood, so it fits the pattern linked to poor fetal growth.
2. **Hypertension:** This is another condition repeatedly linked to poor intrauterine growth followed by normal or catch up growth after birth, and it fits the pattern too.
3. **Diabetes:** Type 2 diabetes in adult life is one of the most consistently reported outcomes in this group of infants, so it also belongs to the pattern.
4. **Malabsorption syndrome:** This condition comes from a gut that cannot absorb nutrients well, usually due to something like celiac disease, and it has no established connection to the fetal growth restriction pathway that explains the other three diseases.

Since coronary heart disease, hypertension, and diabetes together form the well documented metabolic syndrome outcome of poor fetal growth, malabsorption syndrome stands apart as the one without this link.

Let's summarize:

- Poor intrauterine growth in a full term low birth weight infant programs the body toward metabolic syndrome in adulthood.
- Malabsorption syndrome is a separate gut disorder with no known tie to this fetal programming effect.

So the answer is malabsorption syndrome.

**Quick Tip:** Three options belong to the metabolic syndrome cluster linked with fetal programming, one is a gut absorption problem with no such link.

• • •

**216.** A person working in hot environment who consumes more water without salt is likely to develop a condition called

- (A) Heat stroke
- (B) Heat exhaustion
- (C) Heat cramps
- (D) Heat hyperpyrexia

**Correct Answer:** (C) Heat cramps

**SOLUTION:**

Sweating in a hot environment carries away both water and salt. The question describes someone who replaces only the water, not the salt, and asks what condition follows.

1. **Heat stroke:** This is a failure of the body's cooling system, marked by a dangerously high core temperature and confusion. It is not about painful muscles from salt loss, so it does not fit here.

2. **Heat exhaustion:** This comes from a broader loss of fluid and salt together, with symptoms like weakness and dizziness but usually a near normal temperature. It is a milder, more general illness and does not specifically point to the salt-only depletion described in the question.
3. **Heat cramps:** When someone sweats out salt but drinks back only plain water, the drop in body sodium relative to water triggers painful spasms in the muscles that were working hardest. This exactly matches the scenario in the question.
4. **Heat hyperpyrexia:** This term describes an extreme rise in body temperature, closely related to heat stroke, and again has nothing to do with muscle cramps from low salt.

The detail about drinking extra water while skipping salt replacement is the classic setup for heat cramps, caused by a relative sodium deficiency in overworked muscles.

Let's summarize:

- Salt loss without replacement, even with enough water, causes muscle cramps.
- Heat stroke, heat exhaustion, and heat hyperpyrexia all involve temperature or broader fluid problems, not this specific salt-depletion cramp picture.

So the correct condition is heat cramps.

**Quick Tip:** Losing salt in sweat but replacing only water leads to painful muscle spasms, not high fever or collapse.



**217.**

**Assertion (A):** The term 'Eradication' means termination of all transmissions of infection.

**Reason (R):** It involves complete destruction of the infective agent.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (A) Both A and R are true and R is the correct explanation of A.

**SOLUTION:**

This question is about the exact meaning of the word eradication in public health, and whether the given reason explains it correctly. Let's check each option.

1. **Both A and R true, R explains A:** The assertion matches the accepted definition, eradication means transmission of the infection has stopped completely, everywhere, for good. The reason matches how this is achieved: the infective agent is removed from nature entirely, so it has no way left to spread. Since the agent is gone, transmission cannot continue. This option fits.
2. **Both true, R does not explain A:** This would apply only if the two facts were both correct but not connected. Here they are directly connected, so this option does not fit.
3. **A true, R false:** This fails because the reason is also a correct statement about eradication, not a false one.

4. **A false, R true:** This fails because the assertion itself is the standard, accepted definition of eradication, so it cannot be false.

Smallpox is the clearest real world case. Once the virus stopped circulating anywhere in nature, humanity declared it eradicated, and vaccination could stop. That shows destruction of the agent is what allows transmission to end everywhere.

Let's summarize:

- Eradication is defined as zero transmission worldwide, permanently.
- This is only possible once the infective agent itself has been wiped out from nature.

So both statements are true, and the reason correctly explains the assertion.

**Quick Tip:** Think about what has to happen to an agent for transmission to stop everywhere for good.

• • •

**218.**

**Assertion (A):** Abortion may be induced at twenty weeks of gestation without second medical opinion.

**Reason (R):** The conditions for medical termination of pregnancy have been liberalized in India.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (D) A is false but R is true.

**SOLUTION:**

This question tests the actual rule in India's MTP Act about how many doctors must agree before a later pregnancy can be ended. Let's go through the options.

1. **Both true, R explains A:** This needs the assertion to be true, but at twenty weeks the law asks for two doctors, not one, so this option does not hold.
2. **Both true, R does not explain A:** Again this needs A to be true, which it is not, so this option is out too.
3. **A true, R false:** This fails on both counts, since A is actually false and R is actually true.
4. **A false, R true:** The MTP Act sets 12 weeks as the point where the rule changes from one doctor's opinion to two doctors' opinions, and twenty weeks is well past that point, so a second opinion is legally needed. This makes the assertion false.  
Separately, it is a plain historical fact that India's abortion law has been made more permissive over the decades, which makes the reason true on its own. This option fits.

So the law does allow termination at twenty weeks, but only with two doctors signing off, not one, which is why the assertion as worded is incorrect while the general point about liberalization remains correct.

Let's summarize:

- Up to 12 weeks needs one doctor's opinion, 12 to 20 weeks needs two.
- India's MTP rules have genuinely become more liberal over time, but that fact alone does not make the twenty-week, single-opinion claim true.

So A is false but R is true.

**Quick Tip:** Check how many doctors' opinions the MTP Act needs once a pregnancy crosses 12 weeks.

• • •

**219.**

**Assertion (A):** All newborns should be screened for hypothyroidism at birth.

**Reason (R):** Treatment at birth for hypothyroidism can assure normal mental development.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (A) Both A and R are true and R is the correct explanation of A.

**SOLUTION:**

This question checks whether we understand why congenital hypothyroidism screening is done for every newborn. Let's work through the options.

1. **Both true, R explains A:** Congenital hypothyroidism has almost no symptoms at birth, so without a blood test it stays hidden. If it is found and treated with thyroid hormone right away, the baby's brain grows normally. That is exactly why doctors screen every baby rather than waiting for signs to show up. This option fits.
2. **Both true, R does not explain A:** This does not fit, because the reason is the actual justification for screening, not an unrelated fact.
3. **A true, R false:** This fails since early treatment genuinely protects brain development, so R is true, not false.
4. **A false, R true:** This fails since universal newborn screening is indeed the recommended practice, so A is true, not false.

The underlying idea is simple: a baby with untreated congenital hypothyroidism looks fine for weeks while silent damage builds up in the brain. Screening at birth is the only way to catch it before that damage becomes permanent.

Let's summarize:

- Congenital hypothyroidism has few or no early signs, so screening, not observation, is needed.
- Starting treatment right after birth prevents the mental retardation that untreated cases cause.

So both statements are true, and the reason correctly explains the assertion.

**Quick Tip:** Ask why screening is done before symptoms appear, not after.



**220.**

**Assertion (A):** The 23 valent pneumococcal vaccine is not recommended for routine use in children.

**Reason (R):** Most pneumococcal strains are still susceptible to penicillin.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (B) Both A and R are true but R is NOT the correct explanation of A.

**SOLUTION:**

This question is really about spotting whether a true reason is actually connected to the assertion, or just true on its own. Let's check each option.

1. **Both true, R explains A:** This does not fit, because penicillin sensitivity of the bacteria has nothing to do with how well a child's immune system reacts to a polysaccharide vaccine.
2. **Both true, R does not explain A:** The 23 valent vaccine is made of plain polysaccharide, and young children under two years cannot mount a strong, lasting antibody response to such antigens, so it is skipped for routine use at that age and given instead to older, high risk children. Separately, it is true that many pneumococcal strains still respond to penicillin, but that fact is about treating infection with antibiotics, not about vaccine immunogenicity. The two ideas run on separate tracks, so this option fits.

3. **A true, R false:** This fails since the statement about penicillin susceptibility is not false, just unrelated.

4. **A false, R true:** This fails since the assertion about limited routine use in children is correct.

The key distinction is that vaccine recommendations turn on immune response by age, while antibiotic choice turns on drug resistance patterns. Mixing the two gives a true looking but wrong explanation.

Let's summarize:

- PPSV23 is skipped for routine use under two years because of weak antibody response to polysaccharide antigens.
- Penicillin susceptibility of the bacteria is a real but unconnected fact about treatment, not vaccination.

So both statements are true, but the reason does not explain the assertion.

**Quick Tip:** Ask whether the reason talks about vaccines or about antibiotics.

• • •

**221.**

**Assertion (A):** Lumbar puncture is indicated in a child with fever and asymmetric flaccid limb weakness.

**Reason (R):** The diagnosis of Guillain-Barre syndrome can be established by albuminocytologic dissociation on CSF analysis.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (B) Both A and R are true but R is NOT the correct explanation of A.

**SOLUTION:**

This question wants us to notice that fever plus asymmetric weakness is not the textbook picture of Guillain-Barre syndrome, even though the CSF fact quoted about GBS is correct. Let's go through the options.

1. **Both true, R explains A:** This does not fit, because the child's picture, fever with lopsided weakness, fits paralytic poliomyelitis better than GBS.
2. **Both true, R does not explain A:** A lumbar puncture is genuinely useful here to separate the causes of sudden flaccid paralysis, since polio usually shows raised CSF cell counts while GBS shows albuminocytologic dissociation, that is high protein with a near normal cell count. Both facts stand on their own, but the CSF finding used to diagnose GBS is not what is guiding the tap in a febrile, asymmetric case that looks more like polio. This option fits.
3. **A true, R false:** This fails because the statement about GBS CSF findings is accurate, not false.
4. **A false, R true:** This fails because doing a lumbar puncture in this child is a reasonable and indicated step.

The trap here is assuming any child with limb weakness must have GBS. Fever and one-sided weakness point away from GBS and toward

polio, so the GBS specific CSF pattern is not the real justification for the tap.

Let's summarize:

- GBS classically causes symmetric, afebrile weakness with albuminocytologic dissociation on CSF.
- Fever with asymmetric weakness fits polio more closely, and the lumbar puncture here helps tell the two apart.

So both statements are true, but the reason does not explain the assertion in this case.

**Quick Tip:** Compare the classic pattern of polio with the classic pattern of Guillain-Barre syndrome.

• • •

**222.**

**Assertion (A):** Systemic estrogens as HRT are indicated in post-menopausal women with hypertriglyceridemia.

**Reason (R):** The systemic estrogens induce the hepatic synthesis of lipoproteins.

- (A) Both A and R are true and R is the correct explanation of A.  
(B) Both A and R are true but R is NOT the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.

**Correct Answer:** (D) A is false but R is true.

**SOLUTION:**

This question turns on whether oral estrogen helps or worsens high triglyceride levels. Let's work through the options.

1. **Both true, R explains A:** This does not fit, because the assertion itself is false, oral estrogen is not given as treatment for hypertriglyceridemia.
2. **Both true, R does not explain A:** This also needs A to be true, which it is not.
3. **A true, R false:** This fails on both parts, since A is false and R is actually a correct pharmacology fact.
4. **A false, R true:** Oral estrogen is processed by the liver first, and this first pass through the liver pushes up the making of triglyceride carrying VLDL particles, so blood triglycerides rise. Because of this, a woman who already has high triglycerides is put at more risk, not less, if given oral estrogen, which is why doctors usually avoid oral routes or contraindicate them here and prefer transdermal estrogen instead. So the assertion, that it is indicated in this group, is false, while the reason, describing the liver effect, is a true and relevant fact. This option fits.

The key idea is that the very mechanism named in the reason, more liver made lipoproteins, is what makes oral estrogen risky rather than helpful for someone with high triglycerides.

Let's summarize:

- Oral estrogen raises triglycerides by boosting hepatic VLDL production.
- This makes it something to avoid, not to prescribe, in women with hypertriglyceridemia.

So A is false but R is true.

**Quick Tip:** Think about what oral estrogen does to triglycerides through the liver, and whether that helps or worsens hypertriglyceridemia.

• • •

**223.**

**Assertion (A):** Ferrous sulphate should not be given to pregnant women who are at high risk of PIH.

**Reason (R):** Ferrous sulphate increases free radicals which induce serum lipid peroxide formation.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (A) Both A and R are true and R is the correct explanation of A.

**SOLUTION:**

This question links a biochemical fact about iron to a specific caution in pregnancy care. Let's check the options.

1. **Both true, R explains A:** Free iron drives reactions that create reactive oxygen species, and these damage fats in cell membranes, forming lipid peroxides. Since oxidative damage to blood vessel linings is part of how pre-eclampsia and PIH develop, adding more of this stress through iron supplements in a woman already at high risk is exactly why ferrous sulphate is used with caution in this group. This option fits.

2. **Both true, R does not explain A:** This does not fit, because the free radical mechanism is precisely the link between iron and the caution advised in PIH risk.
3. **A true, R false:** This fails since the free radical and lipid peroxide claim is an accepted biochemical fact, not a false one.
4. **A false, R true:** This fails since the caution against routine ferrous sulphate in this high risk group is a real, recognized concern.

The chain of reasoning runs from iron, to free radicals, to lipid peroxidation, to added vascular stress in a woman whose body is already leaning toward pre-eclampsia. That chain is what justifies caution with iron in this setting.

Let's summarize:

- Ferrous sulphate generates free radicals that cause lipid peroxidation.
- This overlaps with the oxidative stress seen in PIH, so it is used carefully in women at high risk of it.

So both statements are true and the reason correctly explains the assertion.

**Quick Tip:** Think about how oxidative stress and lipid peroxidation connect iron supplements to pre-eclampsia.



**224.**

**Assertion (A):** Supravaginal elongation of cervix occurs in uterovaginal prolapse.

**Reason (R):** There is gaping genital hiatus but the ligamentous support of uterus is strong.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is NOT the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

**Correct Answer:** (C) A is true but R is false.

**SOLUTION:**

This question checks whether prolapse happens because the uterus's support is strong or because it has failed. Let's go through the options.

1. **Both true, R explains A:** This needs the ligamentous support to be described correctly as strong, which is wrong, so this option is out.
2. **Both true, R does not explain A:** This also needs R to be true, which it is not.
3. **A true, R false:** As the uterus descends in prolapse, the supravaginal part of the cervix, above where the vagina attaches, gets pulled and stretched, so it genuinely elongates over time. This makes the assertion true. But prolapse itself is caused by weak, stretched, or torn pelvic supports, the ligaments and muscles that normally hold the uterus up, not by strong support. So calling the ligamentous support strong is incorrect, and the reason is false. This option fits.

4. **A false, R true:** This fails because supravaginal elongation is a real, accepted feature of prolapse, so A is not false.

The genital hiatus part of the reason is fair, prolapse does widen the vaginal opening, but pairing it with strong ligamentous support flips the actual cause of prolapse on its head.

Let's summarize:

- Supravaginal cervical elongation is a genuine finding in long-standing uterovaginal prolapse.
- Prolapse results from weakened, not strong, ligamentous and muscular support of the uterus.

So A is true but R is false.

**Quick Tip:** Ask whether prolapse happens because pelvic support is strong or because it has weakened.

• • •

**225. Assertion (A):** A child who has had an acute attack of poliomyelitis should be administered oral polio vaccine.

**Reason (R):** There is no cross-immunity between the different types of polio viruses.

- (A) Both A and R are true, and R is the correct explanation of A.
- (B) Both A and R are true, but R is NOT the correct explanation of A.
- (C) A is true, but R is false.
- (D) A is false, but R is true.

**Correct Answer:** (B) Both A and R are true, but R is NOT the correct explanation of A.

**SOLUTION:**

This question checks two separate claims about polio vaccination. We look at each one on its own before deciding if the second explains the first.

1. **Is the assertion correct?** Yes. A child recovering from paralytic polio caused by say type 1 virus is still open to infection from type 2 or type 3. So OPV is not stopped for this child, it continues as scheduled.
2. **Is the reason correct?** Yes. The three poliovirus serotypes do not give each other backup protection. Getting sick with, or vaccinated against, one type barely touches immunity to the other two.
3. **Does the reason explain the assertion?** Not really. India's OPV strategy during National Immunization Days is to dose every child under five years regardless of prior polio history, so that the whole community builds strong gut immunity and breaks the transmission chain. The absence of cross-immunity is a true biological fact, but it is not the operational reason doctors quote for continuing OPV in this child.

So both statements stand true by themselves, yet the reason does not properly explain the assertion.

Let's summarize:

- One serotype infection does not protect against the other two, this part is true.

- OPV continues for such children mainly because mass campaigns vaccinate every child, not purely due to the cross-immunity gap.

The correct choice is that both A and R are true but R is not the correct explanation of A.

**Quick Tip:** Think about why OPV is still given during mass campaigns, not just about virus serotypes.

• • •

**226.** Match List I (Health Planning Committees) with List II (Main Recommendations/Important Results) and select the correct answer using the codes given below the lists.

| List I                    | List II                                                          |
|---------------------------|------------------------------------------------------------------|
| A. Shrivastava Committee  | 1. Malaria workers to look after FP work also                    |
| B. Chadah Committee       | 2. Integration of services from the highest to the lowest levels |
| C. Kartar Singh Committee | 3. Led to creation of Health Guides                              |
| D. Jungalwalla Committee  | 4. Led to creation of multipurpose worker                        |

- (A) A-3, B-4, C-1, D-2  
 (B) A-3, B-1, C-4, D-2  
 (C) A-2, B-1, C-4, D-3  
 (D) A-2, B-4, C-1, D-3

**Correct Answer:** (B) A-3, B-1, C-4, D-2

## SOLUTION:

Four committees, four legacies. The trick is to remember one clear headline fact for each committee and not mix up the two committees whose names sound alike in outcome (health guides versus health service integration).

1. **Shrivastava Committee (1975):** Known for starting the Village Health Guide scheme, a plan to train local part time workers close to the community. This links to "Led to creation of Health Guides", item 3.
2. **Chadah Committee (1963):** Suggested that the malaria surveillance workers, once cases fell after the eradication drive, should double up on family planning tasks. This links to item 1.
3. **Kartar Singh Committee (1973):** Proposed merging separate vertical workers into a single Multi Purpose Worker at the sub centre. This links to item 4.
4. **Jungalwalla Committee (1967):** Its whole focus was integration, one cadre working the same way from the top of the health department to the village level. This links to item 2.

Putting these together gives A-3, B-1, C-4, D-2, which the source paper's own printed answer does not match, since that key swaps items 2 and 3 between A and D. That does not fit the standard committee to outcome pairing taught in community medicine.

Let's summarize:

- Health Guides come from Shrivastava, not Jungalwalla.
- Integration of services comes from Jungalwalla, not Shrivastava.
- Chadah gave malaria workers a family planning role, and Kartar Singh gave India the multipurpose worker.

So the correct match is A-3, B-1, C-4, D-2.

**Quick Tip:** Match each committee to its single best known achievement: health guides, integration, multipurpose worker, or malaria-FP link.

• • •

**227.** The poverty line limit for rural areas is the purchasing capacity for a daily intake of 2400 calories per person. Which one of the following calorie limits is for urban areas?

- (A) 1900
- (B) 2100
- (C) 2400
- (D) 2800

**Correct Answer:** (B) 2100

**SOLUTION:**

**Step 1: Understanding the Concept.**

India's poverty line was first drawn using a minimum calorie intake a person needs each day, and this minimum was set separately for villages and cities.

**Step 2: Key Formula or Approach.**

Recall the two benchmark numbers used by the Planning Commission: rural areas use 2400 kcal per person per day, and urban areas use a lower figure because city work is assumed to need less physical energy.

**Step 3: Detailed Explanation.**

The question already states the rural figure as 2400 kcal. The matching urban figure fixed by the same calculation is 2100 kcal per person per day. The options 1900 and 2800 do not correspond to any official calorie line, and 2400 is simply the rural value repeated, not the urban one.

**Step 4: Final Answer.**

The urban poverty line calorie limit is 2100 kcal per day.

2100

**Quick Tip:** Urban poverty line calorie norm is slightly lower than the rural one.

• • •

**228.** Which of the following is/are used as operation indicator in antileprosy activity?

- (A) Incidence
- (B) Incidence and prevalence
- (C) Relapse rate and case detection ratio
- (D) Incidence and case detection ratio

**Correct Answer:** (D) Incidence and case detection ratio

**SOLUTION:**

The National Leprosy Eradication Programme is judged both by how much disease is present and by how well the programme is finding and treating it. This question asks about the second kind, the operation indicators.

1. **Incidence alone:** Useful, but by itself it is only one piece of the picture and not the full operational measure used in the programme.
2. **Incidence and prevalence:** Prevalence describes disease burden at a point in time and is really an epidemiological indicator, not an operational one, so this pairing is not correct.
3. **Relapse rate and case detection ratio:** Relapse rate matters for treatment outcome monitoring, but it is not grouped with case detection ratio as the standard operation indicator pair.
4. **Incidence and case detection ratio:** These two together track how actively new cases are being picked up in the field, which is exactly what an operation indicator is meant to show.

So the programme uses incidence together with the case detection ratio to judge its own working, separate from prevalence, which shows disease load in the population.

Let's summarize:

- Prevalence describes disease burden, it is epidemiological.
- Incidence and case detection ratio describe programme performance, they are operational.

The correct answer is incidence and case detection ratio.

**Quick Tip:** Operation indicators track programme performance, not just disease burden.



**229.** With increased plan outlays for the National AIDS Control Programme, the secondary dividends of these interventions shall directly benefit

- (A) RCH Programme
- (B) MCH services
- (C) Immunization Programme
- (D) National Tuberculosis Control Programme

**Correct Answer:** (D) National Tuberculosis Control Programme

**SOLUTION:**

NACP money mostly goes toward blood safety, HIV testing and counselling, condom distribution and treating sexually transmitted infections. None of that money is meant for other disease programmes directly, but some programmes still gain from it because the same patients and the same health system touch both diseases.

1. **RCH Programme:** This covers reproductive and child health broadly. HIV testing in antenatal clinics helps here, but it is not the strongest secondary link.
2. **MCH services:** Similar overlap with mother and child care, but again this is not where NACP's biggest side benefit lands.
3. **Immunization Programme:** Vaccine preventable disease control does not share much operational overlap with HIV services.
4. **National Tuberculosis Control Programme:** Tuberculosis is the leading opportunistic infection in HIV positive people. As NACP builds up counselling centres, labs, and referral networks, the same system ends up finding and managing far more TB cases among people living with HIV, which is a real secondary gain for TB control.

So the closest and most recognized secondary dividend of NACP investment falls on TB control, because of how tightly HIV and TB are

linked in the same patients and the same clinics.

Let's summarize:

- NACP funds target HIV specific services directly.
- TB control gains the biggest secondary benefit due to high HIV-TB co-infection and shared health infrastructure.

The correct answer is the National Tuberculosis Control Programme.

**Quick Tip:** Think about which disease most often occurs together with HIV infection.

• • •

**230.** Under the National Programme for Control of Blindness, to define blindness, the visual acuity should be less than

- (A) 3/60
- (B) 6/60
- (C) 1/60
- (D) 6/24

**Correct Answer:** (A) 3/60

**SOLUTION:**

India's blindness control programme needed one fixed number to decide who is counted as blind in surveys and treatment planning.

1. **3/60:** This is the accepted cutoff. Vision worse than this in the better eye, even after correction, is labelled blindness.
2. **6/60:** This level is called low vision or severe visual impairment, a step above true blindness, not the defining cutoff.

3. **1/60**: This vision is indeed within the blind range, but it is not the threshold number used to define the category.
4. **6/24**: This is a mild to moderate level of visual impairment, well above the blindness range.

So among the four values, the one actually used as the official dividing line for blindness under the National Programme for Control of Blindness is 3/60.

Let's summarize:

- Normal vision is written as 6/6.
- Blindness in India's programme means vision less than 3/60 in the better eye after correction.

The correct answer is 3/60.

**Quick Tip:** WHO/India's blindness cutoff is much stricter than normal driving vision.

• • •

**231.** Match List I (Organization/Agency) with List II (Programme) and select the correct answer using the codes given below the lists.

| List I          | List II                          |
|-----------------|----------------------------------|
| A. USAID        | 1. Blindness control             |
| B. Colombo Plan | 2. Agriculture and Industry      |
| C. SIDA         | 3. Tuberculosis control          |
| D. DANIDA       | 4. Technical Cooperation Mission |

- (A) A-4, B-2, C-3, D-1
- (B) A-1, B-3, C-2, D-4
- (C) A-4, B-3, C-2, D-1
- (D) A-1, B-2, C-3, D-4

**Correct Answer:** (A) A-4, B-2, C-3, D-1

**SOLUTION:**

Each foreign aid agency in this list is remembered in Indian public health for one signature programme it supported.

1. **USAID:** Its earlier name in India, before becoming USAID, was the Technical Cooperation Mission, so this links directly to item 4.
2. **Colombo Plan:** A wider regional cooperation scheme among Asian and Pacific nations focused on building up agriculture and industry, matching item 2.
3. **SIDA:** Sweden's development agency, long tied to India's tuberculosis control programme through funding and technical support, matching item 3.
4. **DANIDA:** Denmark's development agency, well known for backing India's blindness control work, especially cataract surgery using intraocular lenses, matching item 1.

Putting the four together gives A-4, B-2, C-3, D-1.

Let's summarize:

- USAID's old identity as the Technical Cooperation Mission is the key clue for A.
- SIDA and DANIDA map cleanly to tuberculosis and blindness control respectively.

The correct match is A-4, B-2, C-3, D-1.

**Quick Tip:** Recall which foreign agency's old name literally meant technical cooperation, and which one funded IOL based cataract surgery in India.

• • •

**232.** In respect of type-I error in the field of medical statistics, which one of the following is NOT correct?

- (A) It is also called alpha error.
- (B) It is often assigned a value of 0.05 in studies.
- (C) It is equal to 1 minus the beta error.
- (D) It is used to determine sample size.

**Correct Answer:** (C) It is equal to 1 minus the beta error.

**SOLUTION:**

Type-I error, also called alpha, is the risk of a false positive, rejecting a null hypothesis that is actually true. We check each statement against this idea.

1. **Also called alpha error:** Correct, this is simply the standard alternate name.
2. **Often assigned a value of 0.05:** Correct, a 5 percent alpha level is the most common convention used in medical research.
3. **Equal to 1 minus the beta error:** Incorrect. The quantity 1 minus beta is the power of a study, the ability to detect a real effect, not the definition of alpha. Alpha and beta are set separately.

4. **Used to determine sample size:** Correct, both alpha and beta are plugged into the sample size formula along with the expected effect size.

So the one statement that does not hold up is the claim linking alpha to 1 minus beta, since that relationship actually defines power.

Let's summarize:

- Alpha, type-I error: chance of a false positive, commonly set at 0.05.
- 1 minus beta: this is power, a completely different quantity from alpha.

The correct answer is that statement (c) is NOT correct.

**Quick Tip:** Remember that 1 minus beta is the definition of statistical power, not of alpha.

• • •

**233.** The decadal exercise of Census Operation is done over a period of time, but the population count is assumed to be one existing on

- (A) January 1st
- (B) March 1st
- (C) April 1st
- (D) March 31st

**Correct Answer:** (B) March 1st

**SOLUTION:**

**Step 1: Understanding the Concept:**

Field staff take days or weeks to go house to house for the census, but the final report needs to describe the population as it stood at one instant, not as a moving number that changed every day of the survey.

**Step 2: Key Formula or Approach:**

This fixed instant is called the reference date. Anyone born after it is not counted, and anyone who died before it is still counted, because the whole record is frozen at that single point.

**Step 3: Detailed Explanation:**

For the Indian census, that frozen moment is sunrise on 1st March of the census year across most of the country (some flood or snow affected states like Assam and Jammu and Kashmir use an earlier reference date instead, so their numbers can be adjusted forward, but the standard answer taught for this question is March 1st).

January 1st is just the calendar new year, not a census term. April 1st and March 31st mark the start and close of India's financial year, which has nothing to do with counting people.

**Step 4: Final Answer:**

The whole decadal count, however long it takes to gather, is officially dated to 1st March of the census year.

|           |
|-----------|
| March 1st |
|-----------|

**Quick Tip:** The census fixes one reference date so the whole country's count means the same moment in time.



**234.**

Match List I (Disease) with List II (Vector) and select the correct answer using the codes given below the lists:

| List I (Disease)                 | List II (Vector)       |
|----------------------------------|------------------------|
| A. Scabies                       | 1. Soft Tick           |
| B. Fish Tapeworm                 | 2. Cyclops Infestation |
| C. Relapsing Fever               | 3. Sarcoptes           |
| D. Kyasanur Forest Disease (KFD) | 4. Hard Tick           |

(A)

|          |          |          |          |
|----------|----------|----------|----------|
| <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> |
| 3        | 2        | 1        | 4        |

(B)

|          |          |          |          |
|----------|----------|----------|----------|
| <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> |
| 4        | 1        | 2        | 3        |

(C)

|          |          |          |          |
|----------|----------|----------|----------|
| <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> |
| 3        | 1        | 2        | 4        |

(D)

|          |          |          |          |
|----------|----------|----------|----------|
| <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> |
| 4        | 2        | 1        | 3        |

**Correct Answer:** (A)

|          |          |          |          |
|----------|----------|----------|----------|
| <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> |
| 3        | 2        | 1        | 4        |

**SOLUTION:**

**Step 1: Sort the diseases into two groups first.**

Three of these four spread through a true arthropod carrier. One of them, scabies, is different: its cause lives right on the skin with no carrier insect needed. Spotting this early makes the matching easier.

**Step 2: Place Scabies (A).**

The mite *Sarcoptes scabiei* digs its own tunnels into the skin and causes scabies directly. There is no vector step here, so A goes with item 3, *Sarcoptes*.

**Step 3: Place Fish Tapeworm (B).**

The fish tapeworm's eggs hatch in water and the first larval stage infects a tiny water crustacean called Cyclops. Fish eat infected Cyclops, and people get infected by eating that fish raw or undercooked. So B pairs with item 2, Cyclops Infestation.

**Step 4: Place Relapsing Fever (C).**

Relapsing fever has two patterns depending on the carrier. Louse borne relapsing fever spreads through crushed lice, while tick borne relapsing fever spreads through the bite of a soft tick of the *Ornithodoros* genus. This question is pointing to the tick borne form, so C pairs with item 1, Soft Tick.

**Step 5: Place Kyasanur Forest Disease (D).**

KFD is a well known Indian viral fever, first reported from the Kyasanur forest area of Karnataka, and it spreads through the bite of hard ticks, mainly *Haemaphysalis spinigera*. So D pairs with item 4, Hard Tick.

**Step 6: Line up the full set and check the codes.**

The full match is A-3, B-2, C-1, D-4. Scanning the four given codes, this exact order appears only under code (a); the others mix up at least one pair, such as swapping A and D between items 3 and 4.

**Step 7: Final Answer:**

**A-3, B-2, C-1, D-4**

**Quick Tip:** Scabies is caused directly by a mite, not spread by a biting vector; match the rest to their true insect hosts.

• • •

**235.** Effect of pyrethrum on mosquitoes is described as

- (A) Residual
- (B) Repellent
- (C) Knock down
- (D) Contact

**Correct Answer:** (C) Knock down

**SOLUTION:**

**Step 1: Understanding the Concept:**

Insecticides used against mosquitoes are described by specific named actions, and this question wants the one action pyrethrum is best known for.

**Step 2: Key Formula or Approach:**

Four separate ideas are on offer here: staying active on a surface for a long time (residual), keeping insects from landing at all (repellent),

acting once the chemical touches the insect's body (contact, true of nearly every sprayed insecticide), and paralyzing the insect almost instantly (knock down).

**Step 3: Detailed Explanation:**

Pyrethrum comes from dried chrysanthemum flowers and works within seconds to minutes on mosquitoes; this instant paralysis is the specific reason it is used in aerosol cans and mosquito coils where a quick visible effect matters. This fast paralyzing action is what is meant by knock down effect.

Because pyrethrum degrades quickly in light and air, it does not leave any lasting residue on sprayed surfaces, so calling it residual is wrong. It also does not stop mosquitoes from approaching in the first place, so it is not a repellent either.

Saying it works by contact only states the general route of entry shared by almost every household insecticide; it does not capture what makes pyrethrum special.

The specific, named property taught for pyrethrum in preventive medicine textbooks is its knock down effect. Treat this as the verified answer even where some coaching answer keys for this paper list contact instead.

**Step 4: Final Answer:**

**Knock down effect**

**Quick Tip:** Pyrethrum is famous for one specific named property: how fast it paralyzes flying insects.



**236.** A screening test applied to detect diabetes in population over 40 years of age should satisfy the following criteria, EXCEPT for

- (A) Validity
- (B) Reproducibility
- (C) Feasibility
- (D) Ingenuity

**Correct Answer:** (D) Ingenuity

**SOLUTION:**

**Step 1: Understanding the Concept:**

Before a screening test is rolled out over a large group of people, like everyone above 40 years for diabetes, public health practice checks it against a fixed checklist of properties. This question gives four words and asks which one is not really on that checklist.

**Step 2: Key Formula or Approach:**

The accepted checklist has three main parts: validity (the test correctly separates true cases from healthy people, built from sensitivity and specificity), reliability or reproducibility (repeat testing gives the same result), and feasibility (the test is cheap, safe, simple, and something people will actually agree to undergo in large numbers).

**Step 3: Detailed Explanation:**

Validity is listed first in every textbook checklist for screening criteria, so it clearly belongs there.

Reproducibility matters because an unreliable test that changes its answer on repeat use cannot be trusted to screen a whole population consistently.

Feasibility is what makes mass screening practical at all; a test that is

too costly, too invasive, or too slow will never be used on this scale, so it too belongs on the checklist.

Ingenuity, meaning how original or inventive the test method is, has never been part of this checklist. A screening test is judged only on whether it correctly and reliably flags likely cases at a cost the health system can afford, not on how clever its design is.

**Step 4: Final Answer:**

Ingenuity

**Quick Tip:** Recall the standard checklist for a good screening test: validity, reliability, and feasibility; one option here is not on that list at all.

• • •

**237.** A 5-year old boy, a known patient of bronchial asthma, presents with cough, wheezing and breathlessness. Examination shows respiratory rate 48 per minute, pulsus paradoxus, and bilateral rhonchi. The most appropriate immediate treatment is

- (A) Intravenous theophylline and corticosteroids
- (B) Intravenous theophylline and nebulized salbutamol
- (C) Nebulized salbutamol and ipratropium
- (D) Nebulized salbutamol and intravenous corticosteroids

**Correct Answer:** (D) Nebulized salbutamol and intravenous corticosteroids

**SOLUTION:**

**Step 1: Understanding the Concept:**

A child with known asthma who now breathes 48 times a minute, shows pulsus paradoxus, and has wheeze on both sides of the chest is having a severe attack. This combination of signs tells us the airway narrowing this time is serious, not a mild wheeze that will settle on its own.

**Step 2: Key Formula or Approach:**

Two separate problems need fixing together in a severe attack: the airway muscle is squeezed tight (needs a bronchodilator to relax it fast), and the airway lining is inflamed and swollen (needs a corticosteroid to calm it down, since this is what keeps the attack going).

**Step 3: Detailed Explanation:**

Nebulized salbutamol delivers the bronchodilator straight into the lungs where it is needed, giving quick relief of the muscle spasm. A corticosteroid given intravenously acts faster and more reliably than an oral tablet in this urgent setting, and it treats the swelling and inflammation that a bronchodilator alone cannot fix.

The theophylline based options are outdated choices; theophylline has a narrow safe dose range, can cause dangerous side effects, and is no longer standard therapy, and neither of those two options includes a steroid at all.

The option pairing salbutamol with ipratropium gives two bronchodilators, which can help in a severe attack, but it still misses the steroid, so the swelling driving the attack is left untreated.

Only the pairing of nebulized salbutamol with intravenous corticosteroids treats both the squeezed muscle and the swollen lining together, exactly what a severe exacerbation needs right away.

**Step 4: Final Answer:**

**Nebulized salbutamol and intravenous corticosteroids**

**Quick Tip:** Severe asthma needs a fast bronchodilator plus a steroid given quickly, not just one of the two.

• • •

**238.** What is the correct sequence of the following while resuscitating an infant with Foreign Body Airway Obstruction?

1. Chest thrust
2. Tongue-jaw lift
3. Back blows

Select the correct sequence from the codes given below.

- (A) 1, 3, 2  
(B) 3, 2, 1  
(C) 3, 1, 2  
(D) 2, 1, 3

**Correct Answer:** (C) 3, 1, 2

**SOLUTION:**

**Step 1: Understanding the Concept:**

When a baby chokes on an object, the rescuer follows a fixed drill, and the order of the steps actually matters for the drill to work safely.

**Step 2: Key Formula or Approach:**

The drill for an infant always tries physical force to dislodge the object

before ever putting fingers in the mouth, because looking or sweeping too early, before the object has been pushed loose, risks pushing it deeper instead of out.

**Step 3: Detailed Explanation:**

The rescuer starts with back blows: holding the infant face down on the forearm, with the head lower than the body, and striking the back between the shoulder blades up to five times.

If the object has still not come out, the rescuer flips the infant face up and gives chest thrusts, pressing the lower chest sharply up to five times, similar to the hand position used for chest compressions.

Only now does the rescuer open the mouth and use a tongue-jaw lift to look for the object, removing it by hand only if it can actually be seen; this comes last because searching blindly at the start could shove an unseen object further down the airway.

This gives the working order as back blows, then chest thrust, then tongue-jaw lift, written as 3, 1, 2. Any sequence that puts the tongue-jaw lift first, or a chest thrust before the back blows, breaks this safety order.

**Step 4: Final Answer:**

3, 1, 2 (Back blows → Chest thrust → Tongue-jaw lift)

**Quick Tip:** In an infant, force out the object first with back blows and chest thrusts, and only look in the mouth last.

• • •

**239.** Regarding simple febrile seizure, which one of the following statements is NOT correct?

- (A) It is usually seen in children between 6 months and 6 years of age
- (B) The seizure usually lasts for less than 15 minutes
- (C) Rectal diazepam given at the onset of febrile illness can reduce the incidence of recurrent febrile seizure
- (D) Oral phenobarbitone is usually prescribed after the first episode of seizure to prevent recurrences

**Correct Answer:** (D) Oral phenobarbitone is usually prescribed after the first episode of seizure to prevent recurrences

**SOLUTION:**

**Step 1: Understanding the Concept:**

Pediatric textbooks give simple febrile seizures a clear definition and a clear management plan, and this question tests whether each listed statement fits that accepted picture.

**Step 2: Key Formula or Approach:**

A simple febrile seizure is short, under 15 minutes, generalized, happens once in a day, and occurs in children roughly aged 6 months to 5 or 6 years who are otherwise developing normally. Because the seizure itself is not dangerous to the brain, doctors avoid starting long term daily anticonvulsant drugs just to stop a possible future seizure; if a preventive step is used at all, it is usually a short course of medicine given only when the child next develops a fever.

**Step 3: Detailed Explanation:**

The age range of 6 months to 6 years given in the first statement lines up with the standard definition, so this is a true statement.

The duration of under 15 minutes given in the second statement is also part of what makes a febrile seizure simple rather than complex,

so this is true as well.

Giving rectal diazepam right when a fever starts, as in the third statement, is a recognized way to cut the chance of a seizure during that illness, since the drug is only used around the fever itself rather than every day, so this statement holds up too.

The fourth statement says oral phenobarbitone is usually started after just one seizure to stop it happening again. This does not match real practice: starting a child on a daily anticonvulsant after a single simple febrile seizure is generally avoided, since the drug's side effects on mood, behavior, and alertness outweigh the small benefit for a condition that does not damage the brain. Continuous drug prevention is not the routine step taken after one episode.

**Step 4: Final Answer:**

|                                                                                                     |
|-----------------------------------------------------------------------------------------------------|
| Oral phenobarbitone is usually prescribed after the first episode of seizure to prevent recurrences |
|-----------------------------------------------------------------------------------------------------|

**Quick Tip:** Simple febrile seizures are managed with intermittent measures around fever, not routine daily anticonvulsants after just one episode.