

CUET PG 2024 Medical Laboratory Technology Question Paper with Solutions

Time Allowed :1 Hour 45 Mins	Maximum Marks :300	Total Questions :75
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General Instructions

Read the following instructions very carefully and strictly follow them:

1. The examination duration is 105 minutes. Manage your time effectively to attempt all questions within this period.
2. The total marks for this examination are 300. Aim to maximize your score by strategically answering each question.
3. There are 75 mandatory questions to be attempted in the Medical Laboratory Technology paper. Ensure that all questions are answered.
4. Questions may appear in a shuffled order. Do not assume a fixed sequence and focus on each question as you proceed.
5. The marking of answers will be displayed as you answer. Use this feature to monitor your performance and adjust your strategy as needed.
6. You may mark questions for review and edit your answers later. Make sure to allocate time for reviewing marked questions before final submission.
7. Be aware of the detailed section and sub-section guidelines provided in the exam. Understanding these will aid in effectively navigating the exam.

1. What is the main function of myosin?

- (a) ATPase activity
- (b) Storage of nutrients
- (c) Synthesis of protein
- (d) AD Pase activity

Correct Answer: (a) ATPase activity.

Solution: Myosin is a motor protein that plays a key role in muscle contraction by hydrolyzing ATP to produce movement. Its primary function is ATPase activity.

💡 Quick Tip

ATPase activity in myosin is crucial for muscle contraction, as it provides the energy for the power stroke.

2. Which heart sound is sharp, short and caused by the sudden closure of semilunar valves?

- (a) First heart sound
- (b) Second heart sound
- (c) Third heart sound
- (d) Fourth heart sound

Correct Answer: (b) Second heart sound.

Solution: The second heart sound (S₂) is caused by the closure of the semilunar valves (aortic and pulmonary) at the end of systole. It is sharp, short, and high-pitched.

 Quick Tip

The second heart sound (S₂) marks the end of systole and is associated with the closing of the semilunar valves.

3. Which enzyme curdles the milk and converts caseinogens first into paracaseinogen and then into calcium paracaseinate?

- (a) Ptyalin
- (b) Pepsin
- (c) Chymosin
- (d) Amylase

Correct Answer: (c) Chymosin.

Solution: Chymosin, also known as rennet, is an enzyme that curdles milk by breaking down caseinogen into paracasein and calcium paracaseinate, which leads to the formation of curds.

 Quick Tip

Chymosin is crucial in dairy production, as it helps in curdling milk to separate curds from whey.

4. What is the main source of energy for skeletal muscle?

- (a) Enzymes
- (b) Fat
- (c) Protein
- (d) Glucose

Correct Answer: (d) Glucose.

Solution: Glucose, in the form of glycogen stored in muscles, is the primary energy source for skeletal muscles during short-term and intense activity.

💡 Quick Tip

During exercise, muscles primarily rely on glucose for quick energy production, especially in anaerobic conditions.

5. Muscle of forearm is divided into which groups?

- (a) Anterior and Posterior muscles
- (b) Lateral and Parietal muscles
- (c) Superior and Inferior muscles
- (d) Superficial and deep muscles

Correct Answer: (c) Superior and Inferior muscles.

Solution: The muscles of the forearm can be categorized based on their location as superior (closer to the elbow) and inferior (closer to the wrist). These groupings help in classifying the muscles according to their function and position in the forearm.

💡 Quick Tip

The superior and inferior classification of muscles helps in understanding the anatomical positioning and movement function of the forearm muscles.

6. An increase in intraocular tension produced due to excessive collection of aqueous humour is called

- (a) Colour blindness
- (b) Accommodation
- (c) Myopia
- (d) Glaucoma

Correct Answer: (d) Glaucoma.

Solution: Glaucoma is a condition characterized by increased intraocular pressure due to an excessive buildup of aqueous humour, which can damage the optic nerve.

💡 Quick Tip

Regular eye exams can help detect glaucoma early and prevent vision loss caused by increased intraocular pressure.

7. Pleura, the covering of lungs is __ membrane

- (a) Serous
- (b) Mucous
- (c) Synovious
- (d) Nuclear

Correct Answer: (a) Serous.

Solution: The pleura is a serous membrane that covers the lungs and lines the chest cavity. It produces a small amount of fluid to reduce friction during breathing.

 Quick Tip

The serous pleura plays an important role in reducing friction and protecting the lungs during respiratory movements.

8. Which bone is cubical in shape and situated at the roof of the nose and in between the eye orbits?

- (a) Parietal bone
- (b) Ethmoid bone
- (c) Sphenoid bone
- (d) Temporal bone

Correct Answer: (b) Ethmoid bone.

Solution: The ethmoid bone is a cubical-shaped bone located at the roof of the nose and between the eye orbits, contributing to the nasal cavity and the orbits.

 Quick Tip

The ethmoid bone is important for forming the nasal septum and the walls of the eye orbits.

9. Resolving power of microscope is due to which of the following?

- (a) Eye piece
- (b) Nose piece
- (c) Objective lens
- (d) Electric bulb

Correct Answer: (c) Objective lens.

Solution: The resolving power of a microscope is mainly due to the objective lens, which determines the clarity and detail of the image by focusing light through the specimen.

 Quick Tip

The objective lens has the greatest impact on the microscope's ability to resolve fine details of the specimen.

10. In which method of Hb estimation, hemoglobin is converted into carboxyhemoglobin?

- (a) Wu's Method
- (b) Oxyhemoglobin Method
- (c) Haldane Gower's Method
- (d) Cyanmethemoglobin Method

Correct Answer: (a) Wu's Method.

Solution: In Wu's method, hemoglobin is converted into carboxyhemoglobin by exposing the blood to carbon monoxide, which helps in measuring the concentration of hemoglobin.

 Quick Tip

Wu's method is commonly used for estimating hemoglobin concentration by converting it into carboxyhemoglobin using carbon monoxide.

11. The dilution factor of blood and RBC diluting fluid is in total erythrocyte count in counting chamber.

- (a) 50
- (b) 100
- (c) 150
- (d) 200

Correct Answer: (d) 200.

Solution: In erythrocyte count, a dilution factor of 200 is commonly used when blood and diluting fluid are mixed for accurate counting in a chamber.

 Quick Tip

Using a dilution factor of 200 ensures accurate RBC count and helps in determining the concentration of red blood cells in the sample.

12. In which condition, there is an idiopathic primary absolute increase in red cell mass associated with panmyelosis?

- (a) Thalassemia Minor
- (b) Thalassemia Major
- (c) Polycythemia Vera
- (d) Polycythemia

Correct Answer: (c) Polycythemia Vera.

Solution: Polycythemia Vera is a myeloproliferative disorder that results in an increased red blood cell mass and is associated with panmyelosis, which is the proliferation of all bone marrow elements.

 Quick Tip

Polycythemia Vera leads to an increase in hematocrit and viscosity of blood, and requires careful management to prevent complications.

13. A 40 years old male had undergone splenectomy 20 years ago. Peripheral blood smear examination would show the presence of

- (a) Dohle bodies
- (b) Hypersegmented neutrophils
- (c) Spherocytes
- (d) Howell-Jolly bodies

Correct Answer: (d) Howell-Jolly bodies.

Solution: After splenectomy, Howell-Jolly bodies, which are remnants of nuclear material, may appear in the peripheral blood smear due to the absence of the spleen's filtering function.

 Quick Tip

Howell-Jolly bodies indicate the spleen's inability to remove these remnants from the blood, which is common after splenectomy.

14. Which component is responsible for the survival of cells in the blood?

- (a) Trisodium citrate
- (b) Biosodium Monophosphates
- (c) Dextrose
- (d) Adenine

Correct Answer: (d) Adenine.

Solution: Adenine is an important component used in blood storage solutions, as it helps in maintaining the ATP levels in red blood cells, contributing to their survival during storage.

 Quick Tip

Adenine helps in the preservation of red blood cells by maintaining their energy reserves during storage.

15. Which time is prolonged in liver disease, congenital deficiency of coagulation factors in the extrinsic pathway, and in oral anticoagulant therapy?

- (a) Bleeding time
- (b) Prothrombin time
- (c) Clot retraction
- (d) Fibrinolytic activity

Correct Answer: (b) Prothrombin time.

Solution: Prothrombin time (PT) is used to assess the extrinsic and common coagulation pathways. It is prolonged in liver disease, deficiencies of coagulation factors, and oral anticoagulant therapy.

 Quick Tip

Prothrombin time is a key test for evaluating coagulation disorders, especially those related to liver function and anticoagulant therapy.

16. Which bleeding disorder is caused due to the deficiency of factor IX?

- (a) Haemophilia B
- (b) Purpura
- (c) Haemophilia A
- (d) Haemophilia C

Correct Answer: (a) Haemophilia B.

Solution: Haemophilia B, also known as Christmas disease, is caused by a deficiency of factor IX, which impairs blood clotting.

💡 Quick Tip

Haemophilia B is a genetic disorder that leads to prolonged bleeding, and treatment involves factor IX replacement.

17. Which of the following linkages makes cellulose unsuitable for human digestion?

- (a) Alpha D-Glucosidic linkage
- (b) Beta D-Glucosidic linkage
- (c) Alpha L-Glucosidic linkage
- (d) Beta L-Glucosidic linkage

Correct Answer: (b) Beta D-Glucosidic linkage.

Solution: Cellulose is composed of beta-D-glucosidic linkages, which humans lack the enzymes to digest, making cellulose indigestible for humans.

💡 Quick Tip

The beta-D-glucosidic linkage in cellulose is resistant to human digestive enzymes, which is why cellulose is not digestible.

18. Sanger studied in 1955 the structure of insulin. The reagent he used for this purpose and which is named after him is known as

- (a) Chlorobenzene
- (b) Nitrobenzene
- (c) Fluorobenzene
- (d) Dinitrofluorobenzene

Correct Answer: (d) Dinitrofluorobenzene.

Solution: Sanger used dinitrofluorobenzene to study the structure of insulin by determining its amino acid sequence.

💡 Quick Tip

Dinitrofluorobenzene was crucial for determining the amino acid sequence of proteins in Sanger's groundbreaking work.

19. Brucella is described correctly by the statement it is a fungus

- (a) It is a fungus

- (b) It is a bacterium
- (c) It is a vegetative reproduction capsule
- (d) It is a part of cilia

Correct Answer: (b) It is a bacterium.

Solution: Brucella is a genus of bacteria that causes brucellosis, an infectious disease affecting both humans and animals.

 Quick Tip

Brucella is a pathogen transmitted through contact with infected animals or their products.

20. If the cystine content of double stranded DNA is 20% of the total bases, then the adenine content will be

- (a) 40%
- (b) 30%
- (c) 20%
- (d) 10%

Correct Answer: (d) 10%.

Solution: If cystine is 20%, guanine will also be 20% (due to base pairing), leaving 60% for adenine and thymine. Since adenine pairs with thymine in equal amounts, the adenine content will be 10%.

 Quick Tip

In double-stranded DNA, the amount of adenine is always equal to thymine, and the amount of guanine equals cystine due to base pairing rules.

21. The terminal reaction in heme synthesis, where Fe^{3+} from transferrin is introduced into protoporphyrin IX, is catalysed by

- (a) Ferrochelatase
- (b) Ferolyase
- (c) Ferro oxidase
- (d) Ferro reductase

Correct Answer: (a) Ferrochelatase.

Solution: Ferrochelatase is the enzyme responsible for the final step in heme synthesis, where

it catalyzes the insertion of iron into protoporphyrin IX, forming heme.

 Quick Tip

The proper function of ferrochelatase is essential for the synthesis of heme, which is crucial for hemoglobin function.

22. The first symptom of vitamin A deficiency is

- (a) Xerosis conjunctivae
- (b) Xerosis cornea
- (c) Nyctalopia
- (d) Bitot's spots

Correct Answer: (c) Nyctalopia.

Solution: Nyctalopia, or night blindness, is often the first symptom of vitamin A deficiency, as this vitamin is essential for the proper functioning of the retina, especially in low-light conditions.

 Quick Tip

Vitamin A is crucial for maintaining healthy vision, especially for seeing in low-light environments.

23. The enzyme that is concerned in the conversion of All-trans retinal to 11-cis retinal belongs to the class of

- (a) Transferases
- (b) Isomerases
- (c) Oxidoreductases
- (d) Hydrolases

Correct Answer: (b) Isomerases.

Solution: The enzyme responsible for the conversion of all-trans retinal to 11-cis retinal, a key step in vision, is an isomerase, which catalyzes the rearrangement of the molecule.

 Quick Tip

The conversion of retinal is critical for the regeneration of rhodopsin, which is essential for vision in low-light conditions.

24. The site of oxidative phosphorylation in the cell is

- (a) Cytoplasm
- (b) Mitochondria
- (c) Golgi apparatus
- (d) Endoplasmic reticulum

Correct Answer: (b) Mitochondria.

Solution: Oxidative phosphorylation occurs in the mitochondria, where ATP is produced through the electron transport chain and ATP synthase.

 Quick Tip

The mitochondria are known as the powerhouse of the cell due to their role in energy production via oxidative phosphorylation.

25. The enzyme-cofactor associated with muscle glycogen phosphorylase is

- (a) Pyridoxal phosphate
- (b) NADP⁺
- (c) NAD⁺
- (d) FMN

Correct Answer: (a) Pyridoxal phosphate.

Solution: Pyridoxal phosphate is a cofactor for glycogen phosphorylase, an enzyme involved in the breakdown of glycogen in muscles to provide energy during exercise.

 Quick Tip

Pyridoxal phosphate is a form of vitamin B6 and plays a key role in enzymatic reactions involved in glycogen metabolism.

26. Who introduced the vaccination method for the prevention of smallpox?

- (a) Edward Jenner
- (b) Joseph Lister
- (c) Robert Koch
- (d) Louis Pasteur

Correct Answer: (a) Edward Jenner.

Solution: Edward Jenner introduced the first successful smallpox vaccination in 1796, which led to the eventual eradication of the disease.

💡 Quick Tip

Jenner's work laid the foundation for the development of vaccines, significantly reducing smallpox worldwide.

27. All are the spore-forming bacteria except

- (a) *Clostridium botulinum*
- (b) *Bacillus subtilis*
- (c) *Bacillus anthracis*
- (d) *Pseudomonas aeruginosa*

Correct Answer: (d) *Pseudomonas aeruginosa*.

Solution: *Pseudomonas aeruginosa* does not form spores, whereas *Clostridium*, *Bacillus subtilis*, and *Bacillus anthracis* are all spore-forming bacteria.

💡 Quick Tip

Spore formation is a survival mechanism for bacteria, allowing them to withstand harsh conditions.

28. Culture medium with low redox potential is required for growth of

- (a) Anaerobic bacteria
- (b) *Escherichia coli*
- (c) *Pseudomonas aeruginosa*
- (d) Aerobic bacteria

Correct Answer: (a) Anaerobic bacteria.

Solution: Anaerobic bacteria require a low redox potential environment for growth, as they thrive in the absence of oxygen.

💡 Quick Tip

Low redox potential is important for maintaining the anaerobic conditions necessary for these bacteria to grow.

29. Which of the following bacteria can survive in the Holder method of pasteurisation?

- (a) *Bordetella pertussis*
- (b) *Coxiella burnetii*
- (c) *Salmonella typhi*
- (d) *Mycobacterium bovis*

Correct Answer: (b) *Coxiella burnetii*.

Solution: *Coxiella burnetii* is resistant to the Holder pasteurization method, which is used for pasteurizing milk and other liquids.

 Quick Tip

The ability of *Coxiella burnetii* to survive pasteurization makes it a concern for public health, especially in dairy products.

30. Which enrichment medium is preferred to grow *Vibrio cholerae*?

- (a) Tetrathionate broth
- (b) Selenite F broth
- (c) Alkaline peptone water
- (d) Glucose broth

Correct Answer: (c) Alkaline peptone water.

Solution: Alkaline peptone water is used as an enrichment medium for the selective growth of *Vibrio cholerae*, particularly in stool samples.

 Quick Tip

Alkaline peptone water enhances the growth of *Vibrio cholerae* while inhibiting other bacteria.

31. Which of the following bacteria produce saccharolytic reaction in cooked meat broth (CMB)?

- (a) *Clostridium perfringens*
- (b) *Clostridium tetani*
- (c) *Pseudomonas aeruginosa*
- (d) *Klebsiella* sp.

Correct Answer: (a) *Clostridium perfringens*.

Solution: *Clostridium perfringens* is known to produce a saccharolytic reaction in cooked meat broth (CMB), where it ferments carbohydrates to produce acid and gas. This is helpful for identifying the bacterium in laboratory settings.

 Quick Tip

Clostridium perfringens is commonly associated with foodborne illness and can be differentiated from other bacteria using saccharolytic activity in CMB.

32. The mutation in which a purine is replaced by pyrimidine and vice versa is known as

- (a) Transversion
- (b) Transition
- (c) Induced mutation
- (d) Transformation

Correct Answer: (a) Transversion.

Solution: A transversion mutation occurs when a purine is substituted by a pyrimidine or a pyrimidine is substituted by a purine. This contrasts with transition mutations, where purines replace purines or pyrimidines replace pyrimidines.

 Quick Tip

Transversion mutations are more disruptive to the DNA sequence than transition mutations due to the structural differences between purines and pyrimidines.

33. Which biochemical test is done to differentiate *Streptococcus agalactiae* from other streptococci?

- (a) Bile tolerance test
- (b) Carbohydrate assimilation test
- (c) CAMP test
- (d) Citrate utilization test

Correct Answer: (c) CAMP test.

Solution: The CAMP test is used to identify *Streptococcus agalactiae*, as it produces a specific synergistic hemolysis pattern when cultured with *Staphylococcus aureus*.

 Quick Tip

The CAMP test is a simple and reliable method for distinguishing *Streptococcus agalactiae* from other streptococcal species.

34. Which test is done to diagnose Rickettsial infection?

- (a) Widal test
- (b) Weil-felix test
- (c) ASO test
- (d) CRP test

Correct Answer: (b) Weil-felix test.

Solution: The Weil-Felix test is used to diagnose Rickettsial infections by detecting agglutination of patient sera with certain *Proteus* antigens, which cross-react with *Rickettsia*.

 Quick Tip

The Weil-Felix test relies on antigenic cross-reactivity between *Rickettsia* and *Proteus* species for diagnosis.

35. Which class of immunoglobulin has maximum concentration in the human body?

- (a) IgG
- (b) IgM
- (c) IgA
- (d) IgE

Correct Answer: (a) IgG.

Solution: IgG is the most abundant immunoglobulin in the human body and plays a key role in the immune response, particularly in defending against bacterial and viral infections.

 Quick Tip

IgG is crucial for long-term immunity and is the most commonly found antibody in the blood.

36. Frozen section is used to demonstrate inclusion

- (a) Secretory granules
- (b) Glycogen
- (c) Lipid
- (d) Pigments

Correct Answer: (c) Lipid.

Solution: Frozen sectioning is used to preserve the tissue structure and is particularly useful for demonstrating lipid inclusions in tissues, especially when studying lipid storage diseases.

💡 Quick Tip

Frozen sections are essential for rapid diagnostic procedures and are used for detecting lipids in tissues.

37. Aggregation of basophilic material which are scattered throughout the nucleus is called

- (a) Nucleolus
- (b) Centrioles
- (c) Chromatin granules
- (d) Secretory granules

Correct Answer: (c) Chromatin granules.

Solution: Chromatin granules refer to the clusters of basophilic material that are scattered throughout the nucleus, consisting of DNA and proteins.

💡 Quick Tip

Chromatin granules represent the material involved in gene expression and DNA replication in the cell nucleus.

38. Which fixative is used for the sections cut by cryostat?

- (a) Cold acetone
- (b) Buffered formal saline
- (c) Absolute ethyl alcohol
- (d) Formalin

Correct Answer: (c) Absolute ethyl alcohol.

Solution: Absolute ethyl alcohol is commonly used as a fixative for frozen tissue sections because it helps preserve tissue morphology and is effective in preventing freezing artifacts.

💡 Quick Tip

Absolute ethyl alcohol preserves the structure of frozen tissue sections, ensuring minimal distortion during examination.

39. In Heidenhain's Susa fixative, the shrinkage produced by Mercuric Chloride is

compensated by the addition of which solution?

- (a) Chromic acid
- (b) Acetic acid
- (c) Potassium Dichromate
- (d) Picric acid

Correct Answer: (b) Acetic acid.

Solution: In Heidenhain's Susa fixative, acetic acid is added to counteract the shrinkage caused by mercuric chloride and to help preserve tissue morphology.

 Quick Tip

Acetic acid is used to balance the effects of mercuric chloride and maintain the integrity of tissue during fixation.

40. In which type of decalcification method, the positively charged calcium ions are attracted to a negatively charged electrode?

- (a) Ion exchange resins
- (b) Ultrasonic decalcification
- (c) Electrolyte decalcification
- (d) By using chelating agents

Correct Answer: (c) Electrolyte decalcification.

Solution: In electrolyte decalcification, calcium ions are removed from the tissue by applying an electrical current, with calcium ions attracted to the negatively charged electrode.

 Quick Tip

Electrolyte decalcification is an effective method for removing calcium from tissues while preserving their structure.

41. The penetration of the paraffin wax in the tissue occurs more readily if part of the cell is

- (a) Fat
- (b) Carbohydrate
- (c) Protein
- (d) Enzyme

Correct Answer: (c) Protein.

Solution: Protein content in the tissue enhances the penetration of paraffin wax during tissue processing, making it easier to achieve proper embedding for sectioning.

 Quick Tip

Protein-rich tissues allow better penetration of paraffin wax, ensuring smoother sectioning and better preservation.

42. In which microtome is a double concave knife used?

- (a) Sliding microtome
- (b) Sledge microtome
- (c) Cambridge rocking microtome
- (d) Rotary microtome

Correct Answer: (c) Cambridge rocking microtome.

Solution: A double concave knife is used in the Cambridge rocking microtome for precise and smooth sectioning of tissue samples.

 Quick Tip

The rocking microtome uses a double concave knife to achieve smooth and uniform cuts.

43. In honing technique, what is used to prevent the hone from slipping during use?

- (a) Damp cloth
- (b) Wooden box
- (c) Metallic object
- (d) Filter paper

Correct Answer: (a) Damp cloth.

Solution: A damp cloth is used to secure the hone in place and prevent slipping during the honing process, ensuring better precision and control.

 Quick Tip

Using a damp cloth in honing provides a stable surface and improves the quality of the sharpening process.

44. First component of complement which binds to antigen-antibody complex in classical pathway is

- (a) C1q
- (b) C1r
- (c) C1s
- (d) C3

Correct Answer: (a) C1q.

Solution: C1q is the first component of the classical complement pathway that binds to the antigen-antibody complex, initiating the complement cascade.

💡 Quick Tip

C1q is crucial in initiating the classical complement cascade, which enhances immune response.

45. The widely accepted theory of antibody formation is

- (a) Direct template theory
- (b) Indirect template theory
- (c) Natural selection theory
- (d) Clonal selection theory

Correct Answer: (d) Clonal selection theory.

Solution: The clonal selection theory explains that individual lymphocytes are selected and proliferate upon encountering an antigen, producing antibodies specific to that antigen.

💡 Quick Tip

Clonal selection theory is the foundation for understanding how the immune system generates specific responses to pathogens.

46. Match List-I with List-II

List-I	List-II
(A) Cellulose	(I) Measurement of GFR
(B) Inulin	(II) Component of diet of diabetics
(C) Starch	(III) Anticoagulant
(D) Heparin	(IV) Principle carbohydrate of diet

Choose the correct answer from the options given below:

- (a) (A) - (III), (B) - (I), (C) - (IV), (D) - (II)

- (b) (A) - (II), (B) - (I), (C) - (IV), (D) - (III)
 (c) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)
 (d) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)

Correct Answer: (b) (A) - (II), (B) - (I), (C) - (IV), (D) - (III).

Solution: - Cellulose is not digestible and is part of the dietary fiber (II). - Inulin is used for measuring Glomerular Filtration Rate (I). - Starch is the principal carbohydrate in the diet (IV). - Heparin is an anticoagulant (III).

 Quick Tip

Knowing the correct uses and functions of substances in the body helps in understanding their role in health and disease.

47. Match List-I with List-II

List-I	List-II
(A) Semiconservative replication of DNA	(I) Embden
(B) Double helical structure of DNA	(II) Meselson and Stahl
(C) Adenosine Mono Phosphate	(III) H. Khorana
(D) Synthesis of Alanine tRNA	(IV) Watson, Crick and Wilkins

Choose the correct answer from the options given below:

- (a) (A) - (II), (B) - (IV), (C) - (I), (D) - (III)
 (b) (A) - (III), (B) - (IV), (C) - (II), (D) - (I)
 (c) (A) - (IV), (B) - (II), (C) - (I), (D) - (III)
 (d) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)

Correct Answer: (a) (A) - (II), (B) - (IV), (C) - (I), (D) - (III).

Solution: - Semiconservative replication of DNA was demonstrated by Meselson and Stahl (II). - Double helical structure of DNA was proposed by Watson, Crick, and Wilkins (IV). - Adenosine Monophosphate synthesis was studied by H. Khorana (III). - Synthesis of alanine tRNA was part of H. Khorana's work (III).

 Quick Tip

Understanding historical contributions to molecular biology is important for appreciating modern genetics.

48. Match List-I with List-II

List-I	List-II
(A) The end of the lag phase	(I) Involution forms are common
(B) In the log phase	(II) Cells are Gram-variable and show irregular staining
(C) In the stationary phase	(III) Cells are smaller and stain uniformly
(D) In the phase of decline	(IV) Bacteria have maximum cell size

Choose the correct answer from the options given below:

- (a) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)
(b) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
(c) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)
(d) (A) - (IV), (B) - (III), (C) - (II), (D) - (I)

Correct Answer: (d) (A) - (IV), (B) - (III), (C) - (II), (D) - (I).

Solution: - The end of the lag phase is marked by bacteria reaching their maximum cell size (IV). - In the log phase, cells are smaller and stain uniformly (III). - In the stationary phase, bacteria begin to show Gram-variable staining and irregular forms (II). - In the phase of decline, involution forms become common (I).

💡 Quick Tip

Understanding bacterial growth phases helps in controlling bacterial culture conditions and interpreting results.

49. Match List-I with List-II

Immunoglobulins	Functions
(A) IgG	(I) Protects the body surface
(B) IgA	(II) Mediates reagenic hypersensitivity
(C) IgM	(III) Protects the body fluids
(D) IgE	(IV) Protects the blood stream

Choose the correct answer from the options given below:

- (a) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)
(b) (A) - (III), (B) - (I), (C) - (IV), (D) - (II)
(c) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
(d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (b) (A) - (III), (B) - (I), (C) - (IV), (D) - (II).

Solution: - IgG protects the body fluids (III). - IgA protects the body surface (I). - IgM protects the blood stream (IV). - IgE mediates reagenic hypersensitivity (II).

 Quick Tip

Immunoglobulins have different roles in immune defense, and understanding their functions helps in interpreting immune responses.

50. Match List-I with List-II

Deficiency Syndrome	List-II
(A) C1 inhibitor	(I) Bacteremia, mainly with Gram negative diplococci: toxoplasmosis
(B) C1, C2, C4 components	(II) Hereditary angioneurotic oedema
(C) C3 and its regulatory protein C3b inactivator	(III) Systemic lupus erythematosus and other collagen vascular diseases
(D) C5, C6, C7, C8, C9 components	(IV) Recurrent pyogenic infections

Choose the correct answer from the options given below:

- (a) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)
- (b) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)
- (c) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
- (d) (A) - (II), (B) - (IV), (C) - (I), (D) - (III)

Correct Answer: (c) (A) - (II), (B) - (III), (C) - (IV), (D) - (I).

Solution: - C1 inhibitor deficiency is associated with hereditary angioneurotic oedema (II). - Deficiencies in C1, C2, and C4 components are associated with systemic lupus erythematosus and other collagen vascular diseases (III). - Deficiency in C3 and its regulatory protein causes recurrent pyogenic infections (IV). - Deficiency in C5, C6, C7, C8, and C9 components results in bacteremia, mainly with Gram-negative diplococci, and toxoplasmosis (I).

 Quick Tip

Understanding complement deficiencies is crucial for diagnosing and managing immune system-related disorders.

51. Match List-I with List-II

Microtome Knives	Use
(A) Plano Concave	(IV) It has one surface plane and other concave
(B) Tool Edge profile	(I) It has got both surfaces flat with a steep cutting edge
(C) Biconcave	(II) Its both surfaces are concave
(D) Plane edge/Wedge shaped	(III) Both the surface are flat

Choose the correct answer from the options given below:

- (a) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)
- (b) (A) - (II), (B) - (I), (C) - (IV), (D) - (III)
- (c) (A) - (III), (B) - (I), (C) - (II), (D) - (IV)

(d) (A) - (IV), (B) - (III), (C) - (II), (D) - (I)

Correct Answer: (a) (A) - (IV), (B) - (I), (C) - (II), (D) - (III).

Solution: - Plano Concave (A) has one surface plane and other concave (IV). - Tool Edge profile (B) has both surfaces flat with a steep cutting edge (I). - Biconcave (C) has both surfaces concave (II). - Plane edge/Wedge shaped (D) has both surfaces flat (III).

 Quick Tip

Understanding the correct types of microtome knives and their uses ensures proper tissue sectioning.

52. Match List-I with List-II

Stain	Component/Tissue
(A) Periodic acid-Schiff	(I) Extracellular collagen
(B) Mucicarmine	(II) Elastic fibers
(C) Van Gieson's	(III) Carbohydrate
(D) Verhoeff's elastic	(IV) Acidic mucin

Choose the correct answer from the options given below:

- (a) (A) - (II), (B) - (IV), (C) - (I), (D) - (III)
- (b) (A) - (IV), (B) - (III), (C) - (I), (D) - (I)
- (c) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)
- (d) (A) - (IV), (B) - (I), (C) - (III), (D) - (II)

Correct Answer: (c) (A) - (III), (B) - (IV), (C) - (I), (D) - (II).

Solution: - Periodic acid-Schiff (A) stains carbohydrates (III). - Mucicarmine (B) stains acidic mucin (IV). - Van Gieson's (C) stains extracellular collagen (I). - Verhoeff's elastic (D) stains elastic fibers (II).

 Quick Tip

Understanding stains and their target components aids in tissue identification during histological examination.

53. Match List-I with List-II

Term(s)	Description
(A) Glycolysis	(I) Production of pyruvate
(B) Anaerobic	(II) Division carried out by bacteria
(C) Binary fission	(III) Metabolic activities without oxygen
(D) Conjugation	(IV) Production of tube to connect two bacteria

Choose the correct answer from the options given below:

- (a) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)
(b) (A) - (II), (B) - (IV), (C) - (I), (D) - (III)
(c) (A) - (III), (B) - (I), (C) - (IV), (D) - (II)
(d) (A) - (I), (B) - (III), (C) - (II), (D) - (IV)

Correct Answer: (d) (A) - (I), (B) - (III), (C) - (II), (D) - (IV).

Solution: - Glycolysis (A) produces pyruvate (I). - Anaerobic (B) refers to metabolic activities without oxygen (III). - Binary fission (C) is division carried out by bacteria (II). - Conjugation (D) involves the production of a tube to connect two bacteria (IV).

Quick Tip

Matching terms to their corresponding biological processes helps in understanding metabolic pathways and cell division.

54. Match List-I with List-II

Vertebrae	Number
(A) Cervical Vertebrae	(I) They are 4 in number
(B) Thoracic Vertebrae	(II) They are 7 in number
(C) Lumbar Vertebrae	(III) They are 12 in number
(D) Coccygeal Vertebrae	(IV) They are 5 in number

Choose the correct answer from the options given below:

- (a) (A) - (IV), (B) - (III), (C) - (II), (D) - (I)
(b) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
(c) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
(d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (c) (A) - (II), (B) - (III), (C) - (IV), (D) - (I).

Solution: - Cervical Vertebrae (A) are 7 in number (II). - Thoracic Vertebrae (B) are 12 in number (III). - Lumbar Vertebrae (C) are 5 in number (IV). - Coccygeal Vertebrae (D) are 4 in number (I).

 Quick Tip

Understanding the anatomy of vertebrae is crucial for studying the skeletal system and its function.

55. Match List-I with List-II

Condition	Symptoms
(A) Glomerulonephritis	(I) Cessation of urine secretion
(B) Anuria	(II) An infection of kidney leading to inflammation
(C) Polyuria	(III) Inflammation of urinary bladder
(D) Cystitis	(IV) Secretion of large quantities of urine

Choose the correct answer from the options given below:

- (a) (A) - (II), (B) - (IV), (C) - (I), (D) - (III)
- (b) (A) - (II), (B) - (I), (C) - (IV), (D) - (III)
- (c) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
- (d) (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Correct Answer: (b) (A) - (II), (B) - (I), (C) - (IV), (D) - (III).

Solution: - Glomerulonephritis (A) is an infection of the kidney leading to inflammation (II).
- Anuria (B) refers to cessation of urine secretion (I). - Polyuria (C) involves the secretion of large quantities of urine (IV). - Cystitis (D) refers to inflammation of the urinary bladder (III).

 Quick Tip

Understanding the symptoms and conditions helps in diagnosing kidney and urinary tract disorders.

56. Identify the metalloproteins from the following

- (A) Ceruloplasmin
- (B) Albumin
- (C) Transferrin
- (D) Mucin

Choose the correct answer from the options given below:

- (a) (A) and (C) only.
- (b) (C) and (D) only.
- (c) (B) and (D) only.
- (d) (A) and (D) only.

Correct Answer: (a) (A) and (C) only.

Solution: Ceruloplasmin (A) and transferrin (C) are metalloproteins that bind metal ions like copper and iron, respectively, while albumin and mucin are not metalloproteins.

 Quick Tip

Metalloproteins play key roles in metal ion transport and storage in the body.

57. The Hydrogen peroxide formed in the erythrocyte is converted into water by which of the following?

- (A) G6PD
- (B) Catalase
- (C) Methemoglobin reductase
- (D) Glutathione peroxidase

Choose the correct answer from the options given below:

- (a) (A) and (B) only.
- (b) (B) and (D) only.
- (c) (A) and (C) only.
- (d) (C) and (D) only.

Correct Answer: (b) (B) and (D) only.

Solution: Catalase and Glutathione peroxidase are the enzymes responsible for converting hydrogen peroxide into water, protecting erythrocytes from oxidative damage. G6PD and Methemoglobin reductase are not involved in this process.

 Quick Tip

Catalase and Glutathione peroxidase are key enzymes in the detoxification of hydrogen peroxide in erythrocytes.

58. Excess niacin administration may cause

- (A) Lowering of blood pressure
- (B) Hypertension
- (C) Flushing syndrome
- (D) Vasoconstriction

Choose the correct answer from the options given below:

- (a) (A) and (D) only.
- (b) (B) and (C) only.
- (c) (C) and (D) only.

(d) (A) and (C) only.

Correct Answer: (d) (A) and (C) only.

Solution: Excess niacin administration can cause a lowering of blood pressure (A) and flushing syndrome (C), both common side effects. However, vasoconstriction and hypertension are not typical responses to excess niacin.

 Quick Tip

Flushing syndrome and lowering of blood pressure are well-known effects of excessive niacin intake.

59. What are the identical urinary findings in both metabolic acidosis and respiratory acidosis?

- (a) pH: acidic
- (b) NaHPO_4 : Increased
- (c) Titrable acidity: Increased
- (d) NH_4Cl : Decreased

Choose the correct answer from the options given below:

- (a) (A), (B) and (D) only.
- (b) (A), (B) and (C) only.
- (c) (B), (C) and (D) only.
- (d) (A), (C) and (D) only.

Correct Answer: (b) (A), (B) and (C) only.

Solution: Both metabolic and respiratory acidosis result in an acidic pH (A), increased NaHPO_4 (B), and increased titrable acidity (C) in the urine.

 Quick Tip

Monitoring urinary changes can help distinguish between metabolic and respiratory acidosis for accurate diagnosis.

60. De novo synthesis of purines, is not operative in

- (A) Liver
- (B) Erythrocytes
- (C) Kidney
- (D) Brain

Choose the correct answer from the options given below:

- (a) (B) and (D) only.
- (b) (A) and (C) only.
- (c) (A), and (B) only.
- (d) (C) and (D) only.

Correct Answer: (a) (B) and (D) only.

Solution: The de novo synthesis of purines does not occur in erythrocytes (B) and brain (D). Erythrocytes lack the necessary organelles for de novo purine synthesis, while the brain relies on the salvage pathway for purines. The liver and kidneys are involved in the de novo synthesis of purines.

 Quick Tip

De novo purine synthesis is essential in many tissues, except in erythrocytes and the brain, where alternative pathways are utilized.

61. Read the following statements and choose the correct answers from the options given below:

- (A). In Neisser's stain, Neisser's methylene blue is used as a counter stain.
- (B). Granular part stains blue-black in color by Neisser's stain in bacteria.
- (C). Negative staining is used for the identification of the capsule.
- (D). By using Hiss method of capsule stain, capsules stain yellowish-green in color.

Choose the correct answer from the options given below:

- (a) (B) and (D) only.
- (b) (A) and (C) only.
- (c) (A) and (B) only.
- (d) (B) and (C) only.

Correct Answer: (d) (B) and (C) only.

Solution: Granular parts in bacteria stain blue-black in color with Neisser's stain, and negative staining is used for the identification of the capsule.

 Quick Tip

Negative staining is a key technique in microbiology for identifying bacterial capsules.

62. Read the following statement and choose the correct answer from the options given below:

- (A). In MacConkey agar, Escherichia coli is used as +ve control organism.

- (B). *Clostridium botulinum*, an anaerobic organism, may produce some growth on the surface of an aerobic bacteria supporting agar plate.
- (C). In Candle Jar method, carbon dioxide gas is produced inside the Candle Jar, which stimulates the growth of bacteria.
- (D). The popular but ineffective anaerobic culture method is biological method.

Choose the correct answer from the options given below:

- (a) (A) and (D) only.
- (b) (B) and (C) only.
- (c) (A) and (C) only.
- (d) (C) and (D) only.

Correct Answer: (c) (A) and (C) only.

Solution: MacConkey agar uses *E. coli* as a positive control, and the Candle Jar method produces CO₂ to stimulate bacterial growth.

 Quick Tip

The Candle Jar method is widely used for growing anaerobic bacteria in a controlled environment.

63. Read the following statements and choose the correct answer from the options given below:

- (A). In heavy bacterial infection, toxic granules are present in neutrophils.
- (B). Basophilia is observed in all conditions except myxedema.
- (C). Charcot-Leyden crystals are formed by degeneration of eosinophils.
- (D). Human leukocyte antigen test is done to determine donor/recipient compatibility for tissue transplantation.

Choose the correct answer from the options given below:

- (a) (A), (B) and (C) only.
- (b) (A), (B) and (D) only.
- (c) (A), (C) and (D) only.
- (d) (B), (C) and (D) only.

Correct Answer: (c) (A), (C) and (D) only.

Solution: Toxic granules in neutrophils are seen during bacterial infections, Charcot-Leyden crystals form due to eosinophil degeneration, and HLA testing is done to ensure tissue compatibility for transplants.

 Quick Tip

Charcot-Leyden crystals and HLA testing are important diagnostic and transplant compatibility tools.

64. Read the following statements and choose the correct answer from the options given below:

- (A). After the telophase stage of cell division, two daughter cells are formed.
- (B). The process of cell division is called osmosis.
- (C). Network formed by reticular fibers supports cells, capillaries & nerve fibers.
- (D). Granulomas are typically soft in Gumma.

Choose the correct answer from the options given below:

- (a) (A) and (D) only.
- (b) (A) and (C) only.
- (c) (B) and (D) only.
- (d) (C) and (D) only.

Correct Answer: (b) (A) and (C) only.

Solution: Telophase results in two daughter cells, and reticular fibers support cells and capillaries. Osmosis is not related to cell division.

 Quick Tip

Reticular fibers form a supportive network in connective tissues and organs.

65. Read the following statements and choose the correct answer from the options given below:

- (A). Sphenoid bone is at the back and lower part of the cranial cavity.
- (B). Ethmoid bone lies at the base of the skull.
- (C). Frontal bone forms the forehead and the roof of the orbit.
- (D). Parietal bone forms the roofs and sides of the skull.

Choose the correct answer from the options given below:

- (a) (A) and (D) only.
- (b) (B) and (C) only.
- (c) (A) and (B) only.
- (d) (C) and (D) only.

Correct Answer: (d) (C) and (D) only.

Solution: The frontal bone forms the forehead and roof of the orbit, while the parietal bone

forms the roofs and sides of the skull.

 Quick Tip

The frontal and parietal bones play significant roles in the structure and protection of the skull.

66. Arrange the following in proper sequence:

- (A). Counter stain
- (B). Mordant
- (C). Primary stain
- (D). Decolorization

Choose the correct answer from the options given below:

- (a) (C), (B), (D), (A)
- (b) (A), (B), (D), (C)
- (c) (B), (A), (D), (C)
- (d) (C), (B), (A), (D)

Correct Answer: (a) (C), (B), (D), (A).

Solution: The sequence in staining procedures typically follows primary stain, mordant, decolorization, and then counterstaining.

 Quick Tip

Understanding the staining process helps in distinguishing different cell types and structures under a microscope.

67. Arrange the following steps of sporulation in correct order from initial stage:

- (A). Engulfment of fore spore
- (B). Axial filament formation
- (C). Septum formation
- (D). Cortex formation

Choose the correct answer from the options given below:

- (a) (A), (B), (D), (C)
- (b) (B), (C), (A), (D)
- (c) (C), (D), (B), (A)
- (d) (B), (A), (C), (D)

Correct Answer: (b) (B), (C), (A), (D).

Solution: Sporulation begins with axial filament formation, followed by septum formation, engulfment of the fore spore, and finally cortex formation.

 Quick Tip

Understanding the stages of sporulation is essential in microbiology to study bacterial survival mechanisms.

68. Arrange the following events in inflammatory response in correct sequence:

- (A). Phagocytes migration
- (B). Tissue damage release mediators that include capillary permeability
- (C). Leakage of fluid (exudate) and cells
- (D). Phagocytes and exudate destroy bacteria

Choose the correct answer from the options given below:

- (a) (A), (C), (B), (D)
- (b) (A), (D), (B), (C)
- (c) (B), (C), (A), (D)
- (d) (C), (B), (D), (A)

Correct Answer: (c) (B), (C), (A), (D).

Solution: The correct sequence of the inflammatory response is the release of mediators (B), followed by leakage of fluid and cells (C), migration of phagocytes (A), and finally, the phagocytes and exudate destroy bacteria (D).

 Quick Tip

This sequence plays a critical role in the body's defense mechanism during an infection.

69. Arrange the following steps of tissue processing in histopathology lab in correct sequence:

- (A). Dehydration
- (B). Fixation
- (C). Clearing
- (D). Infiltration Impregnation

Choose the correct answer from the options given below:

- (a) (A), (B), (D), (C)
- (b) (D), (A), (C), (B)
- (c) (B), (A), (C), (D)
- (d) (C), (B), (D), (A)

Correct Answer: (c) (B), (A), (C), (D).

Solution: The tissue processing steps typically follow fixation, dehydration, clearing, and finally, infiltration and impregnation.

 Quick Tip

Proper tissue processing ensures optimal preservation for microscopic examination.

70. Arrange the following steps of phagocytosis in sequence:

- (A). Phagosome fuses with lysosome
- (B). Bacterium is ingested, forming phagosome
- (C). Bacterium is killed by lysosomal enzymes
- (D). Bacterium becomes attached to pseudopodia

Choose the correct answer from the options given below:

- (a) (D), (B), (A), (C)
- (b) (A), (C), (B), (D)
- (c) (B), (A), (D), (C)
- (d) (C), (B), (D), (A)

Correct Answer: (a) (D), (B), (A), (C).

Solution: The sequence of phagocytosis starts with the bacterium becoming attached to the pseudopodia (D), followed by ingestion (B), phagosome-lysosome fusion (A), and finally, bacterial destruction by lysosomal enzymes (C).

 Quick Tip

Understanding the steps of phagocytosis is crucial in the study of the immune response.

71. Arrange the following steps of immune response in correct sequence:

- (A). T cells receptors recognize antigen bound to MHC molecule
- (B). Internalized antigen digested by cell
- (C). Bound antigen - MHC activates T cells
- (D). Altered self - cell presents antigen

Choose the correct answer from the options given below:

- (a) (A), (B), (D), (C)
- (b) (A), (C), (B), (D)
- (c) (B), (A), (D), (C)

(d) (B), (D), (A), (C)

Correct Answer: (d) (B), (D), (A), (C).

Solution: The immune response follows the sequence: - Internalized antigen is digested by the cell (B), - The altered self-cell presents the antigen (D), - T cell receptors then recognize the antigen bound to MHC (A), - Finally, the antigen-MHC complex activates T cells (C).

 Quick Tip

The antigen-presenting cells play a crucial role in triggering the immune response.

72. Arrange the following steps for WBC counting in correct order:

- (A). Draw the blood sample, fill venous blood till 0.5 mark
- (B). Place the cover slip on the counting chamber at the right place
- (C). Use a WBC pipette of a hemocytometer
- (D). Draw WBC diluting fluid, fill the fluid till 11 mark, mix with blood

Choose the correct answer from the options given below:

- (a) (A), (C), (B), (D)
- (b) (D), (B), (C), (A)
- (c) (C), (A), (D), (B)
- (d) (C), (A), (B), (D)

Correct Answer: (c) (C), (A), (D), (B)

Solution: The correct procedure for WBC counting begins with using a WBC pipette (C), drawing the blood sample to the 0.5 mark (A), and finally mixing the WBC diluting fluid (D), placing the cover slip (B),.

 Quick Tip

Proper technique in blood sampling and handling is essential for accurate WBC counting.

73. Arrange the following steps in Degradation of uric acid in animals other than man in correct sequence:

- (A) Allantoin
- (B) Uric acid
- (C) Urea
- (D) Allantoin Acid
- (E) Ammonia

Choose the correct answer from the options given below:

- (a) (B), (A), (D), (C), (E)
- (b) (D), (B), (C), (E), (A)
- (c) (B), (E), (D), (A), (C)
- (d) (E), (B), (C), (A), (D)

Correct Answer: (a) (B), (A), (D), (C), (E).

Solution: The correct sequence for uric acid degradation in animals is: Uric acid (B) is converted into allantoin (A), then allantoin acid (D) is formed, followed by urea (C) and ammonia (E).

 Quick Tip

Understanding the metabolic pathways of nitrogenous waste is important in comparative physiology.

74. Arrange the following reactions of citric acid cycle in correct order:

- (A) Formation of Alpha-ketoglutarate
- (B) Conversion of Alpha-ketoglutarate to succinyl CoA
- (C) Formation of citrate
- (D) Citrate is isomerized to isocitrate
- (E) Formation of succinate

Choose the correct answer from the options given below:

- (a) (D), (B), (C), (E), (A)
- (b) (C), (B), (D), (A), (E)
- (c) (C), (D), (A), (B), (E)
- (d) (A), (C), (D), (E), (B)

Correct Answer: (c) (C), (D), (A), (B), (E).

Solution: The correct order of the citric acid cycle steps is: formation of citrate (C), isomerization of citrate to isocitrate (D), formation of alpha-ketoglutarate (A), conversion of alpha-ketoglutarate to succinyl CoA (B), and formation of succinate (E).

 Quick Tip

The citric acid cycle is a critical part of cellular respiration, where energy is generated through oxidation reactions.

75. Arrange the following in order from top to bottom lateral view of adult skull (Frontal bone)

- (A) Lacrimal bone
- (B) Maxilla
- (C) Supra-orbital foramen
- (D) Infra-orbital foramen
- (E) Nasal bone

Choose the correct answer from the options given below:

- (a) (A), (D), (B), (E), (C)
- (b) (C), (A), (E), (D), (B)
- (c) (D), (A), (B), (E), (C)
- (d) (C), (E), (A), (D), (B)

Correct Answer: (d) (C), (E), (A), (D), (B).

Solution: The correct order from top to bottom in the lateral view of the adult skull is: - Supra-orbital foramen (C), - Lacrimal bone (A), - Nasal bone (E), - Infra-orbital foramen (D), - Maxilla (B).

 Quick Tip

Understanding the structure of the skull is essential for studying cranial anatomy.