

NEET MDS 2024 Question Paper with Solutions

Time Allowed :3 Hours 20 minutes	Maximum Marks :720	Total Questions :240
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General Instructions

1. The NEET MDS Exam will be structured with a total of 720 marks.
2. The total duration of the exam is 3 Hours 20 Minutes.
3. The exam will be divided into 3 sections:
 - 1. General Anatomy, Physiology, and Biochemistry.
 - 2. General Pathology, Microbiology, and Pharmacology.
 - 3. Dental and Oral Pathology
4. Each section will contain multiple-choice questions (MCQs) with four options.
5. Negative marking will apply for incorrect answers. For each incorrect answer, 1 mark will be deducted.
6. Ensure that you read each question carefully before answering.
7. No electronic devices, including calculators or mobile phones, are allowed inside the examination hall.
8. Candidates must carry their Admit Cards and valid ID proof to the examination

1. Winterbottom's sign of trypanosomiasis refers to?

- (A) Swelling of lymph nodes in the neck
- (B) Bilateral swelling of the feet
- (C) Presence of fever and chills
- (D) Skin rash on the abdomen

Correct Answer: (A) Swelling of lymph nodes in the neck

Solution:

Winterbottom's sign is a key clinical indicator of the early, or hemolympathic, stage of African trypanosomiasis (sleeping sickness).

It is characterized by the conspicuous swelling and enlargement of the lymph nodes in the posterior cervical triangle, particularly those along the neck.

This lymphadenopathy signifies the multiplication and spread of the Trypanosoma parasites within the lymphatic system.

💡 Quick Tip

Winterbottom's sign is specific for African trypanosomiasis caused by *Trypanosoma brucei gambiense*.

2. Which sinus opening is not present in the middle meatus?

- (A) Maxillary sinus
- (B) Frontal sinus
- (C) Ethmoidal sinus
- (D) Sphenoid sinus

Correct Answer: (D) Sphenoid sinus

Solution:

The middle meatus is the drainage site for the anterior group of paranasal sinuses.

The Maxillary sinus, Frontal sinus, and the Anterior and Middle Ethmoidal air cells all open into the middle meatus.

The Sphenoid sinus drains posteriorly into the sphenoethmoidal recess, which lies above and behind the superior nasal concha.

💡 Quick Tip

The superior meatus receives drainage from the Posterior Ethmoidal cells, and the Sphenoid sinus drains into the sphenoethmoidal recess.

3. How is age estimation from an OPG (Orthopantomogram) of a child done?

- (A) By the eruption sequence of teeth
- (B) By the development of the root apex
- (C) By the length of the crown
- (D) By the shape of the jaw

Correct Answer: (B) By the development of the root apex

Solution:

Age estimation methods like Nolla's and Demirjian's rely on assessing the stages of tooth calcification and formation.

The most reliable, quantifiable part of this process involves tracking the closure and maturation of the root apex.

A fully formed root apex (closed apical foramen) indicates dental maturity, making its development stage a strong correlate for chronological age.

💡 Quick Tip

While eruption sequence is used, the radiographic assessment of root apex formation is a more biologically precise and internationally accepted method for estimating dental age.

4. What is the thick band-like gingiva on the canine called?

- (A) Mucogingival junction
- (B) Gingival recession
- (C) Gingival hyperplasia
- (D) Gingival collar

Correct Answer: (D) Gingival collar

Solution:

The gingival collar is an anatomical term synonymous with the free gingiva or marginal gingiva.

It is the cuff of tissue that immediately surrounds the neck of the tooth.

This tissue is unattached and often appears as a defined, band-like structure, particularly prominent around single-rooted teeth like the canine.

💡 Quick Tip

The gingival collar forms the wall of the gingival sulcus, distinguishing it from the attached gingiva.

5. Does interproximal wear result in mesial drift?

- (A) Yes, it can result in mesial drift
- (B) No, it causes distal drift
- (C) No, it causes occlusal wear
- (D) Yes, but only in molars

Correct Answer: (A) Yes, it can result in mesial drift

Solution:

Interproximal wear (attrition) results in the loss of mesiodistal tooth substance.

This loss creates spaces between teeth and compromises arch continuity.

To eliminate these gaps and maintain tight contact, the teeth physiologically drift mesially due to the Anterior Component of Force (ACF).

This mesial drift is a compensatory mechanism driven by biological forces and the transseptal fibers.

 Quick Tip

Mesial drift is a continuous process throughout life, accelerating in response to proximal wear to ensure the integrity of the dental arch.

6. What is the common feature in McCune-Albright syndrome, Fanconi anemia, and Noonan's syndrome?

- (A) Bone marrow failure
- (B) Developmental delays
- (C) Cardiovascular defects
- (D) Endocrine disorders

Correct Answer: (C) Cardiovascular defects

Solution:

Noonan's syndrome is characterized by a high incidence of cardiac issues, particularly pulmonary stenosis and hypertrophic cardiomyopathy.

Fanconi anemia is primarily a bone marrow failure syndrome, but it is also a developmental disorder frequently associated with congenital heart defects (e.g., VSD, PDA).

McCune-Albright syndrome, while known for fibrous dysplasia and endocrine issues, can secondarily affect the cardiovascular system due to associated endocrine hyperfunction (e.g., hypertension or rapid heart rate from hyperthyroidism).

Cardiovascular defects represent a significant systemic morbidity shared or potentially shared across these three syndromes.

 Quick Tip

When faced with overlapping syndrome questions, recall the systems most commonly affected. Cardiac anomalies are highly characteristic of Noonan's syndrome.

7. How is OPG used to identify the age of a child?

- (A) By assessing the shape of the teeth
- (B) By evaluating the eruption of the teeth
- (C) By measuring the length of the jaw
- (D) By identifying calcification stages of teeth

Correct Answer: (D) By identifying calcification stages of teeth

Solution:

Dental age estimation systems (e.g., Demirjian, Nolla) utilize the progressive mineralization of the developing teeth.

This mineralization is divided into specific calcification stages, ranging from crypt formation to apical closure.

Identifying which stage each tooth has reached on the OPG provides the most reliable index of the child's developmental age.

💡 Quick Tip

Calcification stages provide a robust and less variable measure of dental development compared to the timing of tooth eruption.

8. What is tumor staging classification grade?

- (A) TNM Classification
- (B) FIGO Classification
- (C) Breslow Classification
- (D) Ann Arbor Classification

Correct Answer: (C) Breslow Classification

Solution:

Tumor systems are typically categorized into staging (extent of spread) and grading (degree of differentiation/aggressiveness).

TNM, FIGO (Gynecologic cancers), and Ann Arbor (Lymphomas) are systems used for clinical or pathological STAGING.

The Breslow Classification specifically measures the depth of invasion in millimeters for melanoma, which directly correlates with the histological GRADE and prognosis of the tumor.

💡 Quick Tip

TNM is the universal system for staging solid tumors; Breslow is used specifically to grade the depth of invasion in melanoma.

9. What should be done for a premature baby with breathing difficulty and cyanosis?

- (A) Immediate intubation
- (B) Oxygen therapy
- (C) Intravenous fluids
- (D) Monitor and wait

Correct Answer: (A) Immediate intubation

Solution:

Breathing difficulty and cyanosis in a premature baby indicate severe respiratory failure, most commonly due to Neonatal Respiratory Distress Syndrome (NRDS).

This condition involves alveolar collapse due to surfactant deficiency, leading to severe hypoxemia.

Immediate intubation and mechanical ventilation are necessary to ensure adequate oxygenation and to deliver exogenous surfactant, which is the definitive treatment.

Simple oxygen therapy is insufficient for severe cyanotic distress where the underlying issue is lung collapse.

💡 Quick Tip

Cyanosis is a sign of extreme emergency; definitive airway management (intubation) precedes simple supportive measures in severe respiratory distress.

10. What are border movement and neutral zone while recording muscles?

- (A) Border movement refers to the movement of the mandible, and neutral zone refers to the position where muscles have equal force.
- (B) Border movement refers to the limits of tooth movement, and neutral zone refers to the natural resting position.
- (C) Border movement refers to the position of teeth during occlusion, and neutral zone refers to the area of the tongue's influence.
- (D) Border movement refers to the jaw's occlusal position, and neutral zone refers to the teeth's contact.

Correct Answer: (A) Border movement refers to the movement of the mandible, and neutral

zone refers to the position where muscles have equal force.

Solution:

Border movement defines the maximum possible range of motion of the mandible in any direction (sagittal, frontal, or horizontal planes).

The Neutral Zone (or zone of minimum conflict) is the potential space in the mouth where the tongue, cheeks, and lips exert equal and opposing forces.

Optimal prosthesis stability is achieved by placing artificial teeth within this zone of muscular equilibrium.

 Quick Tip

Border movements are anatomical limits determined by the TMJ and ligaments (Pos-selt's envelope), while the Neutral Zone is a dynamic limit determined by muscle function.

11. Which organisms are involved in ANUG (Acute Necrotizing Ulcerative Gingivitis)?

- (A) *Treponema denticola*, *Prevotella intermedia*, *Fusobacterium nucleatum*
- (B) *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Candida albicans*
- (C) *Escherichia coli*, *Pseudomonas aeruginosa*, *Streptococcus mutans*
- (D) *Actinomyces israelii*, *Lactobacillus acidophilus*, *Helicobacter pylori*

Correct Answer: (A) *Treponema denticola*, *Prevotella intermedia*, *Fusobacterium nucleatum*

Solution:

ANUG is associated with a specific polymicrobial infection dominated by anaerobic bacteria, historically called the fusospirochetal complex.

Key species include spirochetes (*Treponema denticola*), fusiform bacilli (*Fusobacterium nucleatum*), and Gram-negative anaerobes (*Prevotella intermedia*).

These organisms work synergistically to produce the characteristic necrotizing lesions of the gingiva.

 Quick Tip

The presence of *Treponema* (spirochetes) and *Fusobacterium* (fusiform rods) in large numbers is pathognomonic for necrotizing periodontal diseases.

12. Given the mean and standard deviation value, how is the standard error calculated?

- (A) Standard error = Standard deviation / square root of sample size
- (B) Standard error = Mean / sample size
- (C) Standard error = Standard deviation * sample size
- (D) Standard error = Standard deviation / sample size

Correct Answer: (A) Standard error = Standard deviation / square root of sample size

Solution:

The Standard Error of the Mean (SEM) is a measure of how far the sample mean is likely to be from the true population mean.

It relates the variability within the sample (Standard Deviation, SD) to the size of the sample (N).

The mathematical formula is $SEM = \frac{SD}{\sqrt{N}}$.

💡 Quick Tip

The Standard Error (SEM) decreases as the sample size (N) increases, meaning larger samples yield more precise estimates of the population mean.

13. Which precancerous lesions were identified in 2005 by the WHO?

- (A) Leukoplakia, Erythroplakia
- (B) Lichen planus, Actinic keratosis
- (C) Oral submucous fibrosis, Candidiasis
- (D) Basal cell carcinoma, Squamous cell carcinoma

Correct Answer: (A) Leukoplakia, Erythroplakia

Solution:

In 2005, the World Health Organization (WHO) redefined "precancerous lesions" as "Potentially Malignant Disorders" (PMDs).

Leukoplakia (white patches) and Erythroplakia (red patches) are historically and currently the most significant PMDs due to their high transformation rates.

Erythroplakia, in particular, has the highest malignant transformation potential among oral PMDs.

💡 Quick Tip

The WHO PMD classification includes Leukoplakia, Erythroplakia, Oral Submucous Fibrosis (OSMF), and certain types of Chronic Hyperplastic Candidiasis. Option (A) lists the two most common and high-risk lesions.

14. What is the best treatment option for an avulsion that happened 10 minutes ago?

- (A) Immediate reimplantation of the tooth
- (B) Use of an ice pack and waiting for dental intervention
- (C) Preservation in milk and reimplantation
- (D) No treatment necessary

Correct Answer: (A) Immediate reimplantation of the tooth

Solution:

For an avulsed tooth, the success of healing depends crucially on the viability of the periodontal ligament (PDL) cells.

When the extra-oral time is short (10 minutes), the PDL cells are viable.

Immediate reimplantation at the site of injury (by the patient or parent) provides the best chance for maintaining PDL vitality and achieving successful healing.

If immediate reimplantation is not possible, storage medium (C) is the next best step, but immediate reimplantation takes precedence.

💡 Quick Tip

The golden time for avulsion is < 30 minutes of dry time. If the tooth is clean and intact, immediate reimplantation is the standard of care for optimal prognosis.

15. Unilateral cleft lip occurs due to?

- (A) Genetic factors
- (B) Environmental factors
- (C) Both genetic and environmental factors
- (D) Nutritional deficiency

Correct Answer: (C) Both genetic and environmental factors

Solution:

Cleft lip and palate (CL/P) are classical examples of multifactorial inheritance congenital

anomalies.

The etiology involves the interaction between underlying genetic susceptibility (multiple genes) and external environmental triggers.

Environmental factors include maternal exposure to teratogens (smoking, alcohol, certain medications) during critical stages of palatal and lip formation (weeks 4 – 12).

 Quick Tip

Multifactorial inheritance indicates that the disorder results from the combination of a genetic predisposition and environmental influences.

16. If anterior teeth are periodontally compromised, what is the major connector in partial denture construction?

- (A) Lingual bar
- (B) Palatal bar
- (C) Kennedy bar
- (D) Lingual plate

Correct Answer: (D) Lingual plate

Solution:

A Lingual plate (or linguoplate) major connector is a thin plate of metal covering the lingual surfaces of the anterior teeth and the marginal gingiva (if necessary).

This design provides splinting and stabilization for periodontally weakened or compromised mandibular anterior teeth.

A Lingual bar, by contrast, provides rigidity but no stabilization, as it must be positioned clear of the teeth and gingiva.

 Quick Tip

The Lingual plate is the major connector of choice in mandibular RPDs when maximum rigidity and stabilization of anterior teeth are required.

17. What is the Merin classification?

- (A) Classification of periodontal disease
- (B) Classification of malocclusion
- (C) Classification of fractures

(D) Classification of cleft lips and palates

Correct Answer: (D) Classification of cleft lips and palates

Solution:

The Merin Classification system is a standardized method used in orthodontics and surgery for describing the anatomical extent and severity of cleft lip and palate deformities.

It provides detailed descriptors necessary for surgical planning and comparative studies.

💡 Quick Tip

Other prominent cleft classification systems include the Veau, Kernahan, and LAHSHAL systems.

18. What is the dose of adrenaline in Angina Pectoris?

(A) 1 mg

(B) 0.5 mg

(C) 0.3 mg

(D) 0.2 mg

Correct Answer: (C) 0.3 mg

Solution:

Adrenaline (Epinephrine) is generally contraindicated in Angina Pectoris because its cardiovascular stimulating effects increase myocardial oxygen demand, potentially worsening ischemia.

However, if a patient with Angina Pectoris experiences a life-threatening acute emergency like anaphylaxis or severe allergic reaction during dental treatment, adrenaline must be administered.

The standard adult dose for intramuscular administration of 1 : 1000 epinephrine in such emergencies is 0.3 mg.

💡 Quick Tip

In dental settings, the 0.3 mg dose (1 : 1000 IM) is used for anaphylaxis, even in cardiac patients, as the risk of anaphylactic death outweighs the cardiac risk.

19. There was an image-based question on Cherubism. What is Cherubism?

(A) A congenital bone disorder affecting the face

- (B) A type of cranial deformity due to birth trauma
- (C) A rare soft tissue disorder of the mouth
- (D) A vascular malformation in the skull

Correct Answer: (A) A congenital bone disorder affecting the face

Solution:

Cherubism is an autosomal dominant genetic disorder of the bone affecting the jaws and facial skeleton.

It causes bilateral, symmetric, painless enlargement of the mandible and sometimes the maxilla.

Radiographically, it presents as multilocular radiolucencies containing giant cells, resembling giant cell granulomas.

💡 Quick Tip

Cherubism is characterized by progressive mandibular and maxillary swelling in childhood, often giving the child an upward gaze (cherubic look) due to displacement of the orbital contents.

20. Which drug is given in ACLS (Advanced Cardiac Life Support) for Ventricular Tachycardia?

- (A) Amiodarone
- (B) Atropine
- (C) Adrenaline
- (D) Lidocaine

Correct Answer: (A) Amiodarone

Solution:

In the ACLS algorithm for pulseless Ventricular Tachycardia (VT) or Ventricular Fibrillation (VF), the priority drugs are epinephrine (adrenaline) and antiarrhythmics.

Amiodarone is the first-line antiarrhythmic drug administered after initial defibrillation attempts and epinephrine have failed.

It is used to stabilize the heart rhythm and prevent further life-threatening arrhythmias.

Lidocaine is considered an acceptable second-line alternative.

💡 Quick Tip

Amiodarone is the preferred antiarrhythmic in cardiac arrest (VT/VF). Atropine is used for bradycardia, and Adrenaline is the primary vasoconstrictor/pressor.

21. A girl was having a problem with her eye. She could not see the whiteboard from a distance but she could see the textbook. What is it?

- (A) Hypermetropia
- (B) Myopia
- (C) Astigmatism
- (D) Presbyopia

Correct Answer: (B) Myopia

Solution:

The patient can see objects clearly near her (textbook) but has difficulty seeing distant objects (whiteboard).

This condition is known as Myopia (nearsightedness).

In myopia, the focal point falls in front of the retina, making distant objects appear blurry.

💡 Quick Tip

Myopia is corrected using concave (diverging) lenses, while Hypermetropia (farsightedness) is corrected using convex (converging) lenses.

22. What is the level of the Thyroid Cartilage?

- (A) C4
- (B) C5
- (C) C6
- (D) C3

Correct Answer: (A) C4

Solution:

The superior border of the thyroid cartilage is typically located opposite the fourth cervical vertebra (C4).

Its inferior border is generally opposite the lower part of C5.

Since C4 is the highest and most precise single option representing the main bulk/superior margin, it is the best answer.

 Quick Tip

The cricoid cartilage is reliably located opposite C6, a landmark used for performing tracheotomy.

23. What is the antidote for Morphine?

- (A) Naloxone
- (B) Flumazenil
- (C) Atropine
- (D) Protamine

Correct Answer: (A) Naloxone

Solution:

Morphine is a powerful opioid analgesic, and overdose leads to respiratory depression.

Naloxone is a pure opioid receptor antagonist that rapidly reverses the effects of opioid drugs, serving as the specific antidote.

Flumazenil is the antidote for benzodiazepine overdose.

 Quick Tip

Naloxone has a short half-life, often requiring repeat doses to counteract the effects of long-acting opioids like morphine.

24. Wallerian degeneration is seen in?

- (A) Peripheral nervous system
- (B) Central nervous system
- (C) Muscular system
- (D) Endocrine system

Correct Answer: (A) Peripheral nervous system

Solution:

Wallerian degeneration is the process that occurs when a nerve axon is severed or crushed.

It involves the disintegration and degeneration of the axon segment distal (away) from the neuronal cell body.

While it can occur in both the CNS and PNS, the term is predominantly associated with the Peripheral Nervous System, where the degeneration is faster and followed by more effective potential regeneration due to the presence of Schwann cells.

 Quick Tip

Axonal regeneration is generally successful in the PNS following Wallerian degeneration, but regeneration in the CNS is typically inhibited by myelin-associated inhibitors and glial scarring.

25. A patient came with painless swelling on the posterior jaw. On aspiration, only a drop of blood is obtained. What is the likely diagnosis?

- (A) Hemangioma
- (B) Odontogenic cyst
- (C) Aneurysmal bone cyst
- (D) Malignant tumor

Correct Answer: (C) Aneurysmal bone cyst

Solution:

Painless swelling in the posterior jaw is a common presentation for benign bony lesions.

Aspiration that yields only a small drop of blood, or is described as "empty," is highly characteristic of an Aneurysmal Bone Cyst (ABC).

The ABC consists of blood-filled, sinusoidal spaces that often fail to fill a syringe due to their high viscosity or rapid collapse upon needle entry.

A Hemangioma (A) would typically yield massive, non-clotting blood due to its high-flow nature.

 Quick Tip

The "drop of blood" or "empty aspiration" sign helps differentiate ABC from high-flow vascular lesions like central hemangioma, which bleed profusely upon attempted aspiration.

26. What is the characteristic feature of Wispy Septa?

- (A) Radiographic appearance in cystic lesions
- (B) Thickening of the bony cortex
- (C) Presence of calcifications
- (D) Bony spicules radiating from the lesion

Correct Answer: (A) Radiographic appearance in cystic lesions

Solution:

"Wispy septa" is a descriptive radiographic term referring to thin, fine internal bony partitions.

These septa create a multilocular or honeycombed internal pattern within a radiolucent lesion.

This appearance is often noted in large, aggressive cystic lesions or benign tumors of the jaw, such as Odontogenic Keratocysts or Ameloblastomas.

Therefore, it describes the internal radiographic appearance within certain cystic/tumor lesions.

💡 Quick Tip

Wispy septa should be contrasted with thick, coarse septa, which may suggest a more slowly growing or aggressive solid tumor. Radiating spicules (D) are characteristic of malignancy (e.g., sunburst appearance in osteosarcoma).

27. Gas gangrene is caused by?

- (A) *Clostridium perfringens*
- (B) *Staphylococcus aureus*
- (C) *Escherichia coli*
- (D) *Pseudomonas aeruginosa*

Correct Answer: (A) *Clostridium perfringens*

Solution:

Gas gangrene (myonecrosis) is a severe bacterial infection characterized by muscle death and gas production within tissues.

It is primarily caused by *Clostridium perfringens*, an anaerobic, spore-forming, Gram-positive rod.

The organism produces toxins that cause rapid tissue destruction and fermentation, leading to gas accumulation.

💡 Quick Tip

Gas gangrene is a medical emergency requiring aggressive surgical debridement and hyperbaric oxygen therapy, in addition to high-dose penicillin.

28. Which fungi is commonly associated with urinary tract infections in catheterized patients?

- (A) *Candida albicans*
- (B) *Aspergillus fumigatus*
- (C) *Cryptococcus neoformans*
- (D) *Histoplasma capsulatum*

Correct Answer: (A) *Candida albicans*

Solution:

Candida species, particularly *Candida albicans*, are the most frequent fungal pathogens associated with hospital-acquired infections (nosocomial infections).

In catheterized patients, *C. albicans* commonly colonizes the urinary tract and forms biofilms on the catheter surface, leading to candiduria and sometimes invasive fungal urinary tract infections.

💡 Quick Tip

Candida is a leading cause of UTIs and bloodstream infections in immunocompromised and catheterized hospital patients.

29. What is the National Pathfinder Survey related to?

- (A) Educational achievement in the United States
 - (B) Nutritional habits of adolescents
 - (C) Global health initiatives
 - (D) Environmental conservation efforts
- Correct Answer:** (B) Nutritional habits of adolescents

Solution:

The National Pathfinder Survey (specifically referring to the U.S. National Institute of Dental Research surveys of the 1980s) was a major epidemiological study.

These surveys focused on the oral health status of children and adolescents, collecting vast data on dental caries, periodontal disease, and crucially, the influence of habits, diet, and fluoride

exposure.

Among the given options, nutritional habits are a key component of dental health epidemiology studied in such surveys.

💡 Quick Tip

Pathfinder surveys are foundational in dental public health, often setting baseline data for national health goals (like monitoring trends in caries prevalence).

30. What is the type of Ameloblastoma?

- (A) Unicystic
- (B) Multicystic
- (C) Peripheral
- (D) All of the above

Correct Answer: (D) All of the above

Solution:

Ameloblastoma, the most common clinically significant odontogenic tumor, is categorized into four main clinicoradiographic types.

These types are: Solid/Multicystic, Unicystic, Peripheral (extraosseous), and Malignant.

Options (A), (B), and (C) list the three major benign variants based on their presentation and biological behavior.

💡 Quick Tip

The Solid/Multicystic Ameloblastoma is the most common and aggressive type, while the Peripheral Ameloblastoma is the least aggressive, presenting as a soft tissue mass.

31. What is the treatment for Mandibular Angle Fracture?

- (A) Open reduction and internal fixation (ORIF)
 - (B) Closed reduction with wiring
 - (C) Conservative management
 - (D) No treatment required
- Correct Answer:** (A) Open reduction and internal fixation (ORIF)

Solution:

Mandibular angle fractures are often unstable because the proximal fragment (ramus) is pulled superiorly and medially by the powerful elevator muscles (masseter, medial pterygoid, temporalis).

Due to this muscular displacement, achieving and maintaining adequate reduction requires stable fixation.

Open Reduction and Internal Fixation (ORIF) using miniplates (usually a two-plate technique or a single load-bearing plate) is the universally accepted standard of care for displaced angle fractures.

💡 Quick Tip

The majority of mandibular fractures are treated with ORIF to ensure anatomical reduction and prompt return to function without long periods of maxillomandibular fixation.

32. Costochondral graft to a child aged 8 years after treatment: why does the mouth deviate to the unoperated site while opening?

- (A) Unilateral condylar growth
- (B) Malposition of the graft
- (C) Neuromuscular imbalance
- (D) Abnormal growth of the temporomandibular joint

Correct Answer: (C) Neuromuscular imbalance

Solution:

The typical deviation upon opening is toward the side of restriction (the operated side), indicating failure of translation on that side.

Deviation to the *unoperated* side implies that the range of movement is severely restricted on the *unoperated* (healthy) side, or that the operated side is hypermobile.

However, the most generalized and frequently cited cause of persistent post-surgical deviation, regardless of direction, is failure of coordinated muscle function.

Neuromuscular imbalance (C), particularly related to the function of the lateral pterygoid muscle, best explains the disturbance in controlled mandibular movement following complex joint surgery.

💡 Quick Tip

Mandibular deviation is often the result of lateral pterygoid muscle dysfunction, whether due to scarring, nerve damage, or altered mechanics of the neo-condyle/graft.

33. What is Stellate granuloma?

- (A) A type of benign skin tumor
- (B) A granulomatous lesion in the oral cavity
- (C) A form of infectious granuloma
- (D) A non-neoplastic lesion affecting the bones

Correct Answer: (C) A form of infectious granuloma

Solution:

The term "stellate granuloma" is often used histologically to describe the star-shaped, central necrosis or arrangement of epithelioid cells and microabscesses.

This specific pattern is a pathognomonic feature of infectious lymphadenitis, most famously seen in Cat-Scratch Disease caused by *Bartonella henselae*.

Therefore, it refers to a specific morphological structure seen within an infectious granuloma of the lymph nodes.

💡 Quick Tip

Stellate microabscesses/granulomas are highly characteristic features of granulomatous infections involving lymph nodes, differentiating them from other types of granulomas (e.g., foreign body or sarcoidosis).

34. What is the role of retention after orthodontic movement?

- (A) To maintain tooth position after active treatment
- (B) To prevent relapse of tooth movement
- (C) To improve facial aesthetics
- (D) To reduce pain after treatment

Correct Answer: (A) To maintain tooth position after active treatment

Solution:

Orthodontic retention is the period following the removal of active appliances, during which retainers are worn.

The primary biological role of retention is to allow the reorganization and maturation of the periodontal ligament, gingival fibers, and adjacent alveolar bone around the newly positioned teeth.

This stabilization achieves the fundamental goal: maintenance of the corrected tooth position.

Prevention of relapse (B) is the direct clinical consequence of successful maintenance (A).

 Quick Tip

The greatest risk of relapse occurs in the first few months post-treatment, making immediate and consistent retention appliance wear critical.

35. What is the stochastic effect of radiographs?

- (A) Cancer and genetic mutations due to radiation exposure
- (B) Immediate tissue damage from radiation
- (C) Loss of tooth enamel due to repeated exposure
- (D) Long-term bone density loss

Correct Answer: (A) Cancer and genetic mutations due to radiation exposure

Solution:

Stochastic effects of radiation are probabilistic, random effects that have no threshold dose.

The severity of the effect is independent of the dose received; only the probability of occurrence increases with dose.

The main examples of stochastic effects are carcinogenesis (cancer) and heritable (genetic) mutations.

Immediate tissue damage (B) is a deterministic effect, which has a dose threshold.

 Quick Tip

Deterministic effects (like erythema, tissue necrosis) have a threshold and their severity increases with dose, unlike stochastic effects.

36. Ductility test is not relevant for?

- (A) Metals
- (B) Polymers
- (C) Glasses

(D) Ceramics

Correct Answer: (D) Ceramics

Solution:

Ductility is the ability of a material to deform plastically under tensile stress without fracturing.

Metals are highly ductile, and polymers can exhibit ductility.

Ceramics (and glasses, which are non-crystalline ceramics) are inherently brittle materials.

Since they fracture before significant plastic deformation occurs, testing for ductility is not relevant to their mechanical characterization.

💡 Quick Tip

Brittleness is the opposite of ductility. Ceramics are brittle materials favored for their hardness and aesthetic properties, not their capacity for deformation.

37. There was a question related to Dentigerous cyst. What is it?

(A) A cyst associated with the crown of an unerupted tooth

(B) A cyst that occurs in the alveolar bone

(C) A cyst caused by impacted wisdom teeth

(D) A cyst in the soft tissue surrounding the tooth

Correct Answer: (A) A cyst associated with the crown of an unerupted tooth

Solution:

A Dentigerous cyst (follicular cyst) develops by the accumulation of fluid between the crown of an unerupted tooth and the reduced enamel epithelium.

It is defined by its association with the crown of an impacted or unerupted tooth.

This cyst is attached at the cemento-enamel junction (CEJ).

💡 Quick Tip

The Dentigerous cyst is the second most common odontogenic cyst (after periapical cyst) and has a risk of transformation into an Ameloblastoma.

38. What is the tooth shedding sequence in primary teeth?

- (A) Incisors, molars, canines
- (B) Molars, incisors, canines
- (C) Canines, incisors, molars
- (D) Molars, canines, incisors

Correct Answer: (A) Incisors, molars, canines

Solution:

The exfoliation sequence of primary teeth generally follows the sequence of eruption, starting around age 6.

The generalized sequence is: Incisors (Central and Lateral) → First Molars → Canines → Second Molars.

Option (A) Incisors, molars, canines, lists the tooth types in the correct chronological order of shedding.

 Quick Tip

The primary mandibular central incisors are typically the first teeth to exfoliate, marking the beginning of the mixed dentition period.

39. What is the HIV prophylaxis?

- (A) Antiretroviral therapy (ART)
- (B) Zidovudine
- (C) Post-exposure prophylaxis (PEP)
- (D) Combination of antiretroviral drugs

Correct Answer: (C) Post-exposure prophylaxis (PEP)

Solution:

HIV prophylaxis refers to preventing HIV infection, often following a known exposure event (e.g., needlestick injury).

Post-exposure prophylaxis (PEP) is the specific medical treatment regimen used immediately after potential exposure to HIV to reduce the risk of infection.

PEP typically involves a combination of antiretroviral drugs, fitting the definition of prophylaxis.

💡 Quick Tip

PEP must be started as soon as possible, ideally within hours, and no later than 72 hours after exposure, and usually involves a course of 28 days of antiretroviral medication.

40. Which drug is used to relax muscles in maxillofacial surgery?

- (A) Midazolam
- (B) Propofol
- (C) Succinylcholine
- (D) Ketamine

Correct Answer: (C) Succinylcholine

Solution:

Maxillofacial surgery often requires complete muscle relaxation to facilitate intubation and surgical access.

Succinylcholine is a depolarizing neuromuscular blocking agent (muscle relaxant) used in anesthesia to induce rapid and profound paralysis.

Midazolam is a sedative, Propofol is a general anesthetic, and Ketamine is a dissociative anesthetic; none are primary muscle relaxants.

💡 Quick Tip

Succinylcholine is known for its rapid onset but short duration of action, making it ideal for rapid sequence intubation (RSI) prior to surgery.

41. There was a question related to Shrugging off the Shoulder in Neck Surgery. What is it related to?

- (A) Accessory nerve damage
- (B) Spinal cord injury
- (C) Shoulder dislocation
- (D) Thoracic outlet syndrome

Correct Answer: (A) Accessory nerve damage

Solution:

The shrugging motion of the shoulder (elevation and retraction) is controlled primarily by the Trapezius muscle.

The Trapezius muscle is innervated by the Spinal Accessory Nerve (CN XI).

This nerve is highly vulnerable during surgeries in the posterior triangle of the neck (e.g., radical neck dissection or lymph node biopsy).

Damage to the Accessory nerve leads to paralysis of the trapezius, resulting in drooping of the shoulder and an inability to shrug.

 Quick Tip

The Accessory Nerve is the most common nerve injury associated with head and neck surgical procedures involving the posterior neck triangle.

42. What are nosocomial infections in a hospital setting?

- (1) Infections acquired from hospital staff
- (2) Infections acquired during hospital stay
- (3) Infections acquired from visitors
- (4) Infections acquired during surgery only

Correct Answer: (2) Infections acquired during hospital stay

Solution:

Nosocomial infections, also known as Healthcare-Associated Infections (HAIs), are infections acquired while receiving care in a healthcare facility.

By definition, the patient must have been admitted for a condition other than the infection and develop the infection typically 48 hours or more after admission.

This encompasses infections from various sources, including staff, instruments, environment, and other patients.

 Quick Tip

The most common nosocomial infections involve the urinary tract (catheter-associated UTI), surgical sites, and the lower respiratory tract (ventilator-associated pneumonia).

43. Which type of implant has the root piece intact?

- (A) Endosteal implant
- (B) Subperiosteal implant
- (C) Transosteal implant
- (D) Root-form implant

Correct Answer: (D) Root-form implant

Solution:

This question is phrased ambiguously. No modern implant system uses an "intact root piece."

However, a Root-form implant (D), a type of endosteal implant, is designed specifically to replicate the shape and function of a natural tooth root.

Among the options, Root-form (4) is the type whose structure is based on the anatomy of the tooth root, providing the closest conceptual fit.

 Quick Tip

Root-form implants are the most widely used type today, relying on osseointegration with the surrounding alveolar bone.

44. What is the recommended area for biopsy from ulcers?

- (A) The margin of the ulcer
- (B) The center of the ulcer
- (C) The surrounding normal tissue
- (D) The deepest part of the ulcer

Correct Answer: (A) The margin of the ulcer

Solution:

When performing an incisional biopsy for a suspected malignant ulcer, the sample must include the junction between the abnormal tissue and the adjacent normal tissue (the margin).

This is crucial because the biopsy must capture the deepest point of invasion or the epithelial dysplasia transitioning to carcinoma, which is usually concentrated at the perimeter.

Taking tissue only from the center (B) often results in sampling only necrotic tissue.

 Quick Tip

An adequate incisional biopsy must include both the representative pathological tissue and a small margin of normal-appearing tissue for comparative histology.

45. Which drug is used for asthma during extraction?

- (A) Albuterol

- (B) Adrenaline
- (C) Atropine
- (D) Hydrocortisone

Correct Answer: (A) Albuterol

Solution:

Acute asthma attacks (bronchospasm) during dental treatment are managed primarily with short-acting beta-2 adrenergic agonists.

Albuterol (Salbutamol) is the standard rescue inhaler drug, causing rapid smooth muscle relaxation in the bronchioles.

Adrenaline (B) is used for anaphylaxis, and Hydrocortisone (D) is a corticosteroid used later for prolonged management, not immediate rescue.

 Quick Tip

Ensure that asthmatic patients bring their rescue inhaler (Albuterol) to every dental appointment and keep it accessible for immediate use.

46. What is the most ethical way to study bone growth?

- (A) Animal experiments
- (B) In vitro studies
- (C) Human clinical studies
- (D) Radiographic analysis

Correct Answer: (D) Radiographic analysis

Solution:

Ethical research prioritizes minimizing invasiveness and risk to human and animal subjects.

Radiographic analysis allows for non-invasive, longitudinal study of growth patterns in living humans over time.

This method provides detailed anatomical data with minimal risk (controlled radiation exposure), making it the most ethical approach compared to invasive human studies or animal sacrifices.

 Quick Tip

In human growth studies, methods that rely on existing clinical records (like longitudinal cephalometric series) are considered the gold standard for both precision and ethical considerations.

47. Which tumor shows resistance to radiation?

- (A) Osteosarcoma
- (B) Glioblastoma
- (C) Squamous cell carcinoma
- (D) Melanoma

Correct Answer: (D) Melanoma

Solution:

Melanoma is classically known for its high intrinsic resistance to conventional fractionated radiation therapy.

This resistance is due to high levels of DNA repair mechanisms and complex cellular defense pathways.

Squamous Cell Carcinoma (C) is generally radiosensitive, especially at the primary site.

 Quick Tip

Melanoma is typically managed surgically, with immunotherapy and targeted therapy playing major roles, due to its poor response to radiotherapy.

48. What is the prenatal period in the human embryological period?

- (A) First 2 weeks
 - (B) 3rd to 8th week
 - (C) 9th week to birth
 - (D) 5th month to birth
- Correct Answer:** (B) 3rd to 8th week

Solution:

The prenatal period (from conception to birth) is divided into three main stages.

The germinal period is the first 2 weeks (A).

The Embryological period is defined as weeks 3 through 8. This is the time of maximal organogenesis and major congenital anomaly risk.

The Fetal period begins at the 9th week (C) and continues until birth, characterized by growth and maturation.

 Quick Tip

The embryological period (3rd to 8th week) is the critical window where most organs, including the palate and lips, are formed, making it the period of highest susceptibility to teratogens.

49. What is the best fluoride-releasing agent?

- (A) Sodium fluoride
- (B) Stannous fluoride
- (C) Calcium fluoride
- (D) Silver diamine fluoride

Correct Answer: (D) Silver diamine fluoride

Solution:

Silver Diamine Fluoride (SDF) is highly regarded as a superior fluoride agent due to its dual mechanism of action.

It releases a high concentration of fluoride ions, promoting remineralization, and the silver component acts as a potent antimicrobial agent against cariogenic bacteria.

This makes it the most effective agent for caries arrest and long-term sustained fluoride release among the options.

 Quick Tip

SDF is primarily used to arrest active carious lesions in primary teeth, especially in non-restorative caries management, despite causing black staining of the treated tooth structure.