

NEET PG 2024 Memory Based Answer Key

- 1. (B) Requirement of neutrophil** – IL-8 is a powerful chemokine responsible for recruitment and activation of neutrophils in ARDS. These activated neutrophils release inflammatory mediators and enzymes that damage the alveolar-capillary membrane. This contributes to pulmonary edema and severe respiratory distress.
- 2. (B) Hepatic copper** – Hepatic copper estimation is considered the gold standard investigation for Wilson disease because copper accumulates primarily in liver tissue. It is especially useful when serum ceruloplasmin levels are inconclusive. Liver biopsy helps confirm excessive copper deposition.
- 3. (C) Adenocarcinoma** – TTF-1 is a nuclear transcription factor commonly positive in lung adenocarcinoma. It helps pathologists differentiate adenocarcinoma from squamous cell carcinoma of the lung. TTF-1 positivity is also seen in thyroid malignancies.
- 4. (C) Vitamin B12** – Gastrectomy removes parietal cells responsible for intrinsic factor production. Without intrinsic factor, Vitamin B12 absorption from the terminal ileum becomes impaired. Long-term deficiency may lead to megaloblastic anemia and neurological symptoms.
- 5. (A) Burkitt's lymphoma** – Burkitt lymphoma is a highly aggressive B-cell lymphoma commonly seen in children. It typically shows CD10, CD19, and surface Ig positivity with high proliferative activity. The tumor is associated with MYC gene translocation and rapid growth.
- 6. (A) BRAF V600E** – BRAF V600E is the most common mutation found in papillary thyroid carcinoma. This mutation activates the MAP kinase pathway leading to uncontrolled cell proliferation. It is also associated with more aggressive tumor behavior in some cases.
- 7. (C) Chromophobe RCC** – Chromophobe renal cell carcinoma arises from intercalated cells of the collecting duct. Patients commonly present with hematuria, flank pain, and renal mass. It generally has a better prognosis compared to clear cell RCC.
- 8. (A) Wiskott-Aldrich syndrome** – Wiskott-Aldrich syndrome is an X-linked recessive disorder characterized by eczema, recurrent infections, and thrombocytopenia. The disease occurs due to defective actin cytoskeleton function in immune cells. Boys are predominantly affected because of X-linked inheritance.
- 9. (C) HOCM** – Hypertrophic obstructive cardiomyopathy causes abnormal septal thickening leading to left ventricular outflow obstruction. Young individuals may develop fatal arrhythmias during strenuous exercise. It is one of the leading causes of sudden cardiac death in athletes.
- 10. (A) VWD type 1 is mostly severe disease in children** – Type 1 von Willebrand disease is generally mild because there is only partial quantitative deficiency of vWF. Type 3 disease is the severe form with near absence of vWF and severe bleeding manifestations. Type 2 mainly involves functional defects in vWF activity.

- 11. (A) Nucleotide excision repair** – Xeroderma pigmentosum results from defective nucleotide excision repair mechanisms. Patients cannot repair UV-induced thymidine dimers effectively, leading to photosensitivity and skin cancers. Even minimal sun exposure can produce severe skin damage.
- 12. (C) Prednisolone + Vinblastine** – Prednisolone and vinblastine are commonly used in treatment of Langerhans cell histiocytosis. The disease may present with hepatosplenomegaly, cytopenias, lymphadenopathy, and skin lesions. Early treatment improves survival and reduces organ damage.
- 13. (B) Submucosa and muscular layer** – Hirschsprung disease involves absence of ganglion cells in Meissner's and Auerbach's plexuses located in submucosal and muscular layers. This causes failure of bowel relaxation leading to intestinal obstruction. Delayed passage of meconium is a classic presentation.
- 14. (D) Muller's muscle** – Muller's muscle is a sympathetically supplied smooth muscle that assists in eyelid elevation. In Horner syndrome, sympathetic disruption causes mild ptosis due to paralysis of this muscle. Associated findings include miosis and anhidrosis.
- 15. (A) Posterior capsular opacification** – Posterior capsular opacification is the most common delayed complication of cataract surgery. Residual lens epithelial cells proliferate over the posterior capsule causing blurry vision. Treatment is usually done using YAG laser capsulotomy.
- 16. (A) Enlargement of blind spot** – Enlargement of the blind spot on perimetry is commonly associated with papilledema and optic disc swelling. Increased intracranial pressure causes elevation of the optic nerve head leading to expansion of the physiological blind spot. It may be an early sign before visual acuity decreases.
- 17. (A) Retinitis pigmentosa** – Retinitis pigmentosa is a hereditary retinal degeneration affecting rod photoreceptors first. Patients commonly present with nyctalopia or night blindness followed by progressive peripheral visual field loss. Fundus examination classically shows bone spicule pigmentation.
- 18. (B) Right eye suppression** – Ocular suppression occurs when the brain ignores visual input from one eye to avoid diplopia or confusion. In right eye suppression, the image from the right eye is neurologically inhibited. This is commonly seen in strabismus and binocular vision disorders.
- 19. (A) Dermoid** – Limbal dermoids are congenital benign tumors composed of choristomatous tissue. They usually appear as yellow-white masses near the corneoscleral junction in children. Surgical excision may be required if vision is affected.
- 20. (B) Ceruloplasmin** – Serum ceruloplasmin is a commonly used screening test for Wilson disease and is usually reduced in affected patients. Ceruloplasmin is a copper-carrying protein synthesized in the liver. Low levels along with increased urinary copper support the diagnosis.

- 21. (B) Vitamin B6** – Pyridoxine or Vitamin B6 acts as a cofactor for enzymes involved in homocysteine metabolism. Some forms of homocystinuria respond well to high-dose pyridoxine supplementation. Treatment helps reduce vascular and neurological complications.
- 22. (A) Galactose-1-phosphate uridyl transferase** – Deficiency of galactose-1-phosphate uridyl transferase causes classic galactosemia in infants. Accumulation of galactose metabolites leads to vomiting, liver dysfunction, cataracts, and metabolic acidosis. Early lactose restriction is essential to prevent severe complications.
- 23. (A) Arnold-Chiari malformation** – Arnold-Chiari malformation involves downward displacement of cerebellar tonsils through the foramen magnum. It may present with headache, ataxia, hydrocephalus, or brainstem compression symptoms. MRI is the investigation of choice for diagnosis.
- 24. (D) Chronic subdural hematoma** – Chronic subdural hematoma commonly occurs in elderly patients after minor head trauma due to tearing of bridging veins. Symptoms may appear weeks later with confusion, headache, or altered behavior. Antiplatelet therapy increases the risk of bleeding.
- 25. (B) Cholangiocarcinoma** – Cholangiocarcinoma is a malignant tumor arising from biliary epithelium and often presents with obstructive jaundice. MRCP helps identify biliary strictures and the extent of tumor involvement. Early diagnosis is important because prognosis is generally poor.
- 26. (B) Endometrioma** – Endometriomas are ovarian cysts filled with altered blood products resulting from endometriosis. MRI typically shows T1 hyperintensity with T2 shading due to repeated hemorrhage. Patients often present with cyclical pelvic pain and infertility.
- 27. (D) Chronic calcific pancreatitis** – Chronic pancreatitis can produce multiple calcifications within the pancreas visible on abdominal X-ray. Long-standing alcohol abuse is a major cause of chronic calcific pancreatitis. Patients often develop chronic abdominal pain and exocrine insufficiency.
- 28. (A) Calcium phosphate** – Proteus species produce urease which alkalinizes urine and promotes formation of phosphate-containing stones. These stones can enlarge rapidly and form staghorn calculi. Recurrent urinary tract infections are commonly associated.
- 29. (B) Cricopharyngeus is the most common site** – The cricopharyngeal region is the narrowest part of the esophagus and the most common site of foreign body impaction. Patients may present with dysphagia, pain, or drooling. Delayed removal increases the risk of perforation and mediastinitis.
- 30. (C) Vitamin B12** – Vitamin B12 deficiency commonly develops after gastrectomy because intrinsic factor secretion decreases significantly. Deficiency may take years to manifest because body stores are initially adequate. Neurological symptoms and macrocytic anemia can occur if untreated.

31. (B) Projection to left sensory cortex – Phantom limb pain occurs due to cortical reorganization after amputation. Adjacent sensory areas in the contralateral sensory cortex expand into the amputated limb representation area. This abnormal neural activity creates painful phantom sensations.

32. (B) Innocuous thermal receptor allodynia – Allodynia refers to pain caused by normally nonpainful stimuli. After sunburn, warm water can activate sensitized thermal receptors causing pain perception. This occurs due to peripheral and central sensitization mechanisms.

33. (A) Increased pressure work raises myocardial oxygen demand – Aortic stenosis causes pressure overload on the left ventricle, increasing myocardial oxygen consumption. In contrast, aortic regurgitation mainly causes volume overload. Pressure work requires greater energy expenditure by cardiac muscle.

34. (A) Filiform papillae – Filiform papillae are the most numerous papillae on the tongue and mainly serve mechanical functions. They do not contain taste buds unlike fungiform, foliate, and circumvallate papillae. Their keratinized surface helps in food manipulation.

35. (B) GLUT4 – GLUT4 is the insulin-sensitive glucose transporter present in skeletal muscle and adipose tissue. Exercise increases GLUT4 translocation to the cell membrane even without insulin stimulation. This improves glucose uptake and reduces insulin resistance in type 2 diabetes.

36. (A) Blocks adenosine action – Caffeine promotes wakefulness by blocking adenosine receptors in the central nervous system. Adenosine normally induces sleepiness and suppresses neuronal activity during prolonged wakefulness. By inhibiting adenosine, caffeine increases alertness and delays sleep onset.

37. (A) Potassium ion – Resting membrane potential is primarily determined by potassium ion permeability across the cell membrane. Potassium tends to diffuse out of the cell through leak channels creating a negative intracellular charge. This electrical gradient is essential for nerve and muscle excitability.

38. (A) Flocculonodular lobe – The flocculonodular lobe of the cerebellum is responsible for balance and coordination of eye movements. Lesions in this area commonly produce gait instability, vertigo, and nystagmus. Alcohol intoxication frequently affects cerebellar function leading to ataxia.

39. (B) CT with contrast – Contrast-enhanced CT scan is the investigation of choice for juvenile nasopharyngeal angiofibroma. It helps define tumor extent and vascularity before surgery. Biopsy is generally avoided because the tumor is highly vascular and may bleed profusely.

40. (B) Electrode – The electrode array of a cochlear implant is inserted into the cochlea to stimulate auditory nerve fibers directly. It bypasses damaged hair cells in patients with severe sensorineural hearing loss. This allows sound perception through electrical impulses.

41. (D) ATN, 7 and 10, GAN – Sensory supply of the external ear is derived from multiple nerves including the auriculotemporal nerve, facial nerve, vagus nerve, and greater auricular nerve. This

overlapping innervation explains referred otalgia from different regions. Proper anatomical knowledge is important during ear surgeries.

- 42. (A) Left saccade on turning head right** – In right vestibular neuritis, the vestibulo-ocular reflex fails when the head is turned toward the affected side. The eyes drift off target and corrective leftward saccades occur. Head impulse testing is useful for differentiating peripheral vertigo from central causes.
- 43. (C) Tracheostomy** – Tracheostomy insertion can become technically difficult in patients with distorted neck anatomy or airway pathology. Accurate anatomical landmarks are essential to avoid complications. Emergency airway management may be challenging in such situations.
- 44. (C) Cricothyroid muscle** – The cricothyroid muscle stretches and tenses the vocal cords, enabling production of high-pitched sounds. Injury to the external branch of the superior laryngeal nerve affects this muscle. Singers commonly notice difficulty in reaching higher notes.
- 45. (A) Maxillary sinus** – The maxillary sinus is the largest paranasal sinus and commonly becomes obstructed due to inflammation or anatomical blockage. CT imaging helps evaluate sinus opacification and drainage pathways. Chronic obstruction may lead to recurrent sinusitis symptoms.
- 46. (B) Toluidine blue** – Toluidine blue is a vital stain used intraoperatively to identify suspicious premalignant or malignant mucosal lesions. Dysplastic cells retain the dye due to increased nucleic acid content. It helps surgeons identify biopsy sites more accurately.
- 47. (B) Glossopharyngeal and vagus nerves** – The gag reflex involves glossopharyngeal nerve as the afferent limb and vagus nerve as the efferent limb. Damage to either nerve can abolish the reflex. Testing the gag reflex helps assess brainstem integrity.
- 48. (1) Double ring sign** – The double ring sign is a characteristic radiological appearance seen in certain airway or gastrointestinal conditions. Recognition of this sign helps narrow the differential diagnosis. Radiographic pattern identification is important in clinical practice.
- 49. (A) Filiform papillae** – Filiform papillae are keratinized projections present over the dorsum of the tongue. They help in food manipulation and provide friction during chewing. Unlike other papillae, they do not contain taste buds.
- 50. (A) Esophagus is the correct site** – The esophagus is a common location for foreign body lodgment because of its natural anatomical constrictions. Patients may present with dysphagia, chest pain, or inability to swallow saliva. Prompt removal prevents perforation and infection.
- 51. (B) True negative** – In conductive hearing loss, bone conduction becomes better than air conduction producing a negative Rinne test. This finding is called a true negative Rinne when genuine conductive deafness exists. It helps differentiate conductive from sensorineural hearing loss.
- 52. (A) Otosclerosis** – Otosclerosis is characterized by abnormal bone remodeling around the stapes footplate causing conductive hearing loss. Patients commonly complain of tinnitus and gradually progressive deafness. Audiometry often shows Carhart notch on PTA.

- 53. (B) Rhinoplasty** – Open rhinoplasty involves external incision placement usually over the columella for better surgical exposure. It is commonly performed for cosmetic correction or nasal reconstruction. Postoperative swelling may persist for several weeks.
- 54. (D) Chance fracture** – Chance fracture is a horizontal vertebral fracture caused by flexion-distraction injury, commonly seen in road traffic accidents. It is associated with seatbelt injuries and may coexist with abdominal trauma. Early diagnosis is important to prevent neurological complications.
- 55. (A) Gartland type 3** – Gartland classification is used for supracondylar fractures of the humerus in children. Type 3 fractures are completely displaced and unstable. They usually require surgical reduction and fixation.
- 56. (A) Nutritional rickets** – Nutritional rickets occurs due to deficiency of Vitamin D leading to defective bone mineralization. Children may present with bone deformities, delayed growth, and recurrent dental problems. Elevated alkaline phosphatase is a common laboratory finding.
- 57. (A) Wrist and knee** – Wrist and knee X-rays are frequently used in forensic medicine for age estimation in adolescents. Ossification centers and epiphyseal fusion patterns help estimate skeletal maturity. These findings are important in medico-legal cases.
- 58. (C) Dynamic hip screw** – Dynamic hip screw is commonly used for fixation of intertrochanteric and certain femoral neck fractures. It allows controlled collapse and compression at the fracture site promoting healing. Early mobilization improves functional recovery.
- 59. (B) L5 segment** – L5 nerve root compression commonly causes pain radiating from the lower back to the lateral thigh and leg. It may occur after lifting heavy weight due to lumbar disc prolapse. Weakness of dorsiflexion can also be present.
- 60. (A) 6–8 weeks** – Fractures involving the base of the fifth metatarsal generally require immobilization with a below-knee cast for 6–8 weeks. Adequate rest is necessary because healing may be delayed in this region. Weight-bearing is gradually resumed after radiological healing.
- 61. (D) Lachman test** – Lachman test is considered the most sensitive clinical examination test for anterior cruciate ligament injury. Excessive anterior movement of the tibia indicates ACL disruption. It is commonly performed in sports-related knee injuries.
- 62. (A) Epiphyseal plate** – The epiphyseal growth plate is responsible for longitudinal bone growth during childhood. Fractures involving this region may cause growth arrest or limb deformity if not treated properly. Early orthopedic management is essential in children.
- 63. (B) Flexor digitorum profundus** – Inability to make the "OK sign" suggests anterior interosseous nerve palsy affecting flexor pollicis longus and flexor digitorum profundus. Patients compensate by forming a flattened pinch instead of a circular sign. It is a pure motor neuropathy.
- 64. (A) Tibial tuberosity** – The tibial tuberosity is the attachment site of the patellar ligament and can be injured during forceful quadriceps contraction. Adolescents are especially prone to avulsion injuries in this region. Pain and swelling occur over the anterior knee.

65. (B) L 5 – The marked vertebral level corresponds to the L4 – L5 intervertebral disc region, and the nerve root most commonly compressed at this level is the L5 nerve root, leading to characteristic symptoms such as weakness in foot dorsiflexion and sensory changes along the lateral leg.

66. Posterior tibial artery – The posterior tibial artery passes behind the medial malleolus between the flexor retinaculum and Achilles tendon. Its pulse can be palpated in this region during vascular examination. It is an important landmark in ankle and foot assessment.

67. (B) Primary callus – Primary bone healing occurs when fracture fragments are rigidly stabilized with plating. In this type of healing, there is minimal external callus formation. Direct remodeling takes place across the fracture line through osteonal reconstruction.

68. Sunburst appearance – Sunburst periosteal reaction is classically associated with osteosarcoma. It occurs due to aggressive periosteal new bone formation radiating outward from the cortex. This radiological sign suggests a rapidly growing malignant bone tumor.

69. (A) t(11;22) – Ewing sarcoma commonly shows t(11;22) chromosomal translocation involving the EWSR1 gene. It is a malignant small round blue cell tumor seen mainly in children and adolescents. Molecular testing helps confirm the diagnosis.

70. Below knee amputation – Below-knee amputation preserves the knee joint, allowing better mobility and rehabilitation compared to above-knee amputation. Proper stump care and physiotherapy are important for prosthetic fitting. Patients generally achieve better functional outcomes.

71. (D) Investigating officer – In medico-legal cases, autopsy is performed on the request of the investigating officer. This helps determine the exact cause and manner of death for legal purposes. Consent from relatives is not required in such situations.

72. (D) Saponification of fats – Adipocere formation is a postmortem change caused by saponification and hydrogenation of body fats. It usually occurs in moist environments and preserves facial features for a long period. The body develops a grayish-white waxy appearance.

73. (A) Contains silica and chlorophyll – Diatoms are microscopic algae with silica-containing cell walls and chlorophyll pigments. Detection of diatoms in tissues may support the diagnosis of drowning. They are highly resistant to acids and decomposition.

74. (B) Close range fire – Close-range firearm injuries typically show tattooing, blackening, or burning around the entry wound. These findings occur because unburnt powder particles strike the skin from a short distance. Wound examination helps estimate firing range in forensic cases.

75. (A) Superfetation – Superfetation refers to fertilization and implantation occurring during an already existing pregnancy. This leads to fetuses with different gestational ages developing simultaneously. It is an extremely rare obstetric phenomenon.

76. (B) Arsenic poisoning – Chronic arsenic poisoning can produce characteristic skin manifestations including pigmentation and keratosis. Gastrointestinal symptoms and neuropathy may also occur. Hair and nail analysis can help confirm exposure.

- 77. (B) Glycolic acid and oxalic acid** – Ethylene glycol metabolism produces toxic metabolites such as glycolic acid and oxalic acid. These compounds cause metabolic acidosis, renal injury, and calcium oxalate crystal deposition. Early treatment is critical to prevent kidney failure.
- 78. (B) Ethylene glycol** – Ethylene glycol poisoning presents with high anion gap metabolic acidosis and hypocalcemia. Calcium oxalate crystal formation contributes to renal damage and neurological symptoms. Antifungal alcohols like fomepizole are used in treatment.
- 79. (A) C** – Emergency hysterectomy performed to save the mother's life is legally justified under life-saving medical provisions. In obstetric emergencies, immediate intervention may be necessary to control severe postpartum hemorrhage. Protecting maternal life becomes the highest priority.
- 80. (A) Cocaine** – Cocaine intoxication produces sympathetic overactivity leading to tachycardia, tachypnea, hypertension, and dilated pupils. Patients may also show agitation, paranoia, or suicidal tendencies. Severe toxicity can result in arrhythmias and seizures.
- 81. (D) Mifepristone + Misoprostol** – Medical termination of pregnancy at around 10 weeks is commonly done using mifepristone followed by misoprostol. Mifepristone blocks progesterone action while misoprostol induces uterine contractions. This combination is highly effective and widely used.
- 82. (A) MTP till 24 weeks in rape victim** – According to amended MTP guidelines, pregnancy due to rape may be terminated up to 24 weeks under specific legal conditions. Such cases are considered under special categories due to psychological trauma. Proper medical evaluation and consent are essential.
- 83. (B) Smothering** – Smothering is a form of asphyxia caused by obstruction of external air passages like the mouth and nose. Postmortem findings may include abrasions around the mouth and signs of struggle. It is commonly encountered in homicidal cases.
- 84. (A) Dhatura intoxication** – Dhatura poisoning produces anticholinergic symptoms such as hot dry skin, dilated pupils, confusion, and staggering gait. Patients may also develop hallucinations and delirium. The poisoning is sometimes used for criminal intoxication.
- 85. (B) Lawyer** – Legal approval from a lawyer is not required for MTP in cases of congenital anomalies. Medical termination decisions are based on medical board recommendations and legal guidelines. Obstetricians and specialists play the major role in evaluation.
- 86. (A) Routine ANC without revealing gender** – Under PCPNDT regulations, fetal sex determination cannot be disclosed to parents. However, routine antenatal ultrasonography for fetal growth and anomaly detection is permitted. Violation of these rules is punishable by law.
- 87. (A) Posthumous child** – A child born after the death of the biological father is termed a posthumous child. DNA fingerprinting can establish biological parentage even after the father's death. Such cases may have legal implications regarding inheritance rights.

88. (A) Barberio test – Barberio test detects semen by identifying yellow needle-shaped spermine crystals. It is used in forensic examination of sexual assault cases. Positive findings support the presence of seminal fluid.

89. (B) Head to foot – Rigor mortis typically appears first in smaller muscles of the face and jaw before progressing downward to the trunk and limbs. This sequential progression is described as head-to-foot development. It is an important parameter in estimating time since death.

90. (A) Closed court proceedings – “In camera” trial refers to court proceedings conducted privately without public access. This is commonly used in sexual assault cases to protect the dignity and confidentiality of the victim. Media reporting is also restricted in such cases.

91. (B) Knee and wrist – Knee and wrist radiographs are commonly used for skeletal age estimation in adolescents. Ossification centers and epiphyseal fusion patterns provide approximate age assessment. These investigations are frequently used in medico-legal disputes involving minors.

92. (D) GPCR T1Ra – Sour taste perception is mediated through specific receptor pathways present in taste buds. Taste receptor activation generates neural signals that travel through cranial nerves to the gustatory cortex. Different taste modalities are mediated by distinct receptor mechanisms.