

INI CET 2021 Answer Key PDF

Q1. (b) B12 .Vitamin B12 deficiency leads to the trapping of methyl-tetrahydrofolate in its inactive form, causing a functional folate deficiency and impaired DNA synthesis.

Q2. (d) RT-PCR .RT-PCR (Reverse Transcriptase Polymerase Chain Reaction) is the preferred method to detect and quantify RNA by converting it to complementary DNA (cDNA) and amplifying it.

Q3. (a) Ion exchange chromatography .Ion exchange chromatography is the gold standard method for measuring HbA1c as it effectively separates glycated and non-glycated hemoglobin.

Q4. (c) Non-rebreathing mask .A non-rebreathing mask can deliver up to 90-100% FiO₂, making it the most effective device for delivering high concentrations of oxygen in conventional therapy.

Q5. (c) Oxidative decarboxylation of alpha-ketoglutarate .In advanced liver disease, oxidative decarboxylation of alpha-ketoglutarate is impaired due to the accumulation of ammonia, disrupting the Krebs cycle.

Q6. (a) 6 weeks .Elective surgery is typically deferred for 6 weeks in patients with mild COVID-19 symptoms to ensure complete recovery and minimize postoperative complications.

Q7. (a) 2, 1, 3, 5, 4 .After incorporation of gene into bacteria, the protein is expressed, cells are lysed, analyzed with SDS PAGE, hybridized, and the protein is eluted.

Q8. (c) 3 .The third pharyngeal pouch gives rise to the thymus and inferior parathyroid glands. Defects in its development result in DiGeorge syndrome.

Q9. (d) 5, 1, 2, 3, 4 .From basal to luminal side: myoepithelial cell > spermatogonia > primary spermatocyte > spermatid > spermatozoa.

Q10. (b) KFD (Kyasanur Forest Disease) .KFD typically presents with hemorrhagic manifestations, fever, and encephalitis but not with skin lesions similar to eschar formation.

Q11. (c) 1 only .CO₂ embolism is characterized by a sudden drop in EtCO₂, hypotension, and hypoxemia, which can occur during gas insufflation in laparoscopic procedures.

Q12. (c) Triglycerides .Triglycerides are completely nonpolar as they consist of glycerol esterified to three fatty acids and lack a hydrophilic head group.

Q13. (c) Irreversible competitive inhibition .Organophosphorus compounds bind covalently to the active site of acetylcholinesterase, leading to irreversible inhibition.

Q14. (b) Segmental vitiligo .Segmental vitiligo presents with depigmented macules in a dermatomal or segmental distribution and may include leukotrichia (white hair).

Q15. (a) KOH mount .A KOH mount is used to confirm dermatophyte infection (e.g., tinea capitis) by demonstrating fungal hyphae.

Q16. (d) Candida Krusei – Fluconazole .Candida krusei is intrinsically resistant to fluconazole due to structural differences in its ergosterol synthesis pathway.

Q17. (a) Block sodium channels .Local anesthetics prevent the propagation of nerve impulses by blocking voltage-gated sodium channels, thereby inhibiting depolarization.

Q18. (a) Atopic dermatitis .Atopic dermatitis often affects flexural areas like the popliteal and cubital fossae in children and is characterized by itchy, eczematous plaques.

Q19. (a) Adenoid facies .Adenoid facies refers to a characteristic facial appearance with open mouth breathing and a high arched palate due to chronic adenoid hypertrophy.

Q20. (d) Parvovirus .Parvovirus B19 infects erythroid progenitor cells, leading to transient aplastic crisis in individuals with underlying hemolytic anemias.

Q21. (b) Multiple myeloma .The presence of anemia, hypercalcemia, renal insufficiency, and osteolytic lesions are characteristic findings of multiple myeloma.

Q22. (b) Topical fluocinolone .Topical fluocinolone is a corticosteroid and is not used for the treatment of acne, which instead uses agents like benzoyl peroxide or antibiotics.

Q23. (c) 3, 4, and 5 .Persistent headache and nasal discharge could indicate secondary infections such as mucormycosis; monitoring glucose levels is also essential due to steroid use.

Q24. (d) D .In the formalin-ether sedimentation technique, parasitic ova are typically found in the sediment or lower layer (D) after processing.

Q25. (d) Super supraglottic swallow .Super supraglottic swallow is not a rehabilitation technique after laryngectomy, whereas esophageal speech and prostheses are common.

Q26. (b) Lichen nitidus .Lichen nitidus is characterized by asymptomatic, small, shiny, flat-topped papules commonly seen on the forearms and genitalia.

Q27. (a) CT angiography to look for large vessel occlusion .CT angiography is indicated to assess large vessel occlusion in acute stroke presentation when the initial NCCT is normal.

Q28. (a) Perilymphatic fistula .Perilymphatic fistula may occur post-ear surgery, causing vertigo and tinnitus due to the leakage of perilymph fluid.

Q29. (a) Cytotoxic T cell .Type 4 hypersensitivity is mediated by T cells, particularly cytotoxic T cells, which release cytokines and cause tissue damage.

Q30. (d) Diuretic .Resistant hypertension is defined as uncontrolled BP despite the use of three antihypertensive agents, which must include a diuretic.

Q31. (a) Herpes Zoster .Herpes Zoster (shingles) presents with painful vesicular lesions distributed in a characteristic dermatomal pattern.

Q32. (a) Urinary sodium <20 mEq/L .In SIADH, urinary sodium is typically >20 mEq/L due to the dilutional nature of the hyponatremia.

Q33. (b) Subcutaneous sumatriptan .Subcutaneous sumatriptan and high-flow oxygen are the first-line treatments for an acute attack of cluster headaches.

Q34. (b) Injecting Aedes thorax with blood of a suspected dengue patient .Xenodiagnosis involves the use of a vector or intermediate host to identify the presence of a pathogen.

Q35. (b) Ambrisentan .Ambrisentan, an endothelin receptor antagonist, is indicated in patients with pulmonary arterial hypertension who do not respond to vasoreactivity testing.

Q36. (b) Ocrelizumab .Ocrelizumab is currently the only FDA-approved treatment for primary progressive multiple sclerosis.

Q37. (b) Sporothrix schenckii .Sporotrichosis presents with nodular lesions following traumatic inoculation, commonly associated with gardening.

- Q38. (a) A-4, B-3, C-1, D-2** .The injuries correlate with the weapon: chop wound (axe), grazed abrasion (RTA), incised wound (blade), and tram track bruise (lathi).
- Q39. (b) 2 and 3** .Warfarin is indicated in patients with atrial fibrillation secondary to valvular heart disease; DOACs are generally not recommended in this specific group.
- Q40. (d) 1, 2, 3, 4** .Imminent eclampsia is indicated by severe features such as headache, blurred vision, epigastric pain, and edema.
- Q41. (d) Prostaglandin analogs** .Prostaglandin analogs can exacerbate inflammation and are contraindicated in uveitic glaucoma.
- Q42. (c) Tamoxifen** .Tamoxifen is an estrogen receptor antagonist primarily used in breast cancer treatment and is not used in PCOD management.
- Q43. (a) Anencephaly** .Anencephaly is characterized by the absence of a major portion of the brain and skull, typically detected via USG.
- Q44. (d) Naïve B cells** .CLL/SLL originates from naïve B cells or memory B cells that have not yet undergone somatic hypermutation.
- Q45. (a) A-4, B-1, C-2, D-3** .Postmortem timings: relaxation of sphincter (24 hrs), marbling (2-3 days), liquefaction (4-5 days), and adipocere (8-10 days).
- Q46. (b) B** .In cystic fibrosis, the pancreatic ducts (marked as B) become obstructed by thick secretions, leading to pancreatic insufficiency.
- Q47. (d) 1, 2, 3, 4** .The correct sequence for Pap smear testing is to retract the vaginal wall, collect the sample, prepare the smear, and then fix it.
- Q48. (b) Factor VII** .Tissue factor (TF) combines with Factor VII to activate Factor IX in the extrinsic pathway of the coagulation cascade.
- Q49. (a) Spermine** .Barberio's test is a chemical test used to detect spermine, which is found in seminal fluid.
- Q50. (a) 1, 2, 3, 4** .The correct sequence of events in cellular inflammation is: Rolling, Activation, Adhesion, and Migration.
- Q51. (b) Controlled cord traction** .Active Management of the Third Stage of Labor (AMTSL) includes the administration of uterotonics, controlled cord traction, and uterine massage.
- Q52. (b) Embryonal rhabdomyosarcoma** .Embryonal rhabdomyosarcoma is a desmin-positive tumor that commonly presents with proptosis in pediatric patients.
- Q53. (b) Kallman syndrome** .Kallman syndrome causes primary amenorrhea due to hypogonadotropic hypogonadism, rather than secondary amenorrhea.
- Q54. (c) 2, 3** .HER2neu is amplified in only a fraction of breast cancers, and EGFR positivity is seen in non-small cell lung cancer.
- Q55. (b) 4%** .According to WHO criteria, normal sperm morphology in a seminal fluid analysis is defined as $\geq 4\%$ normal forms.
- Q56. (a) Gynecomastia and long limbs** .The karyotype (47, XXY) is consistent with Klinefelter syndrome, which presents with these clinical features.

Q57. (c) 1, 3 and 5 .Female skulls are generally identified by a large frontal eminence, a smooth glabella, and a narrow mastoid process.

Q58. (a) Graft versus host disease .Transfusing irradiated RBCs prevents the proliferation of donor T cells, protecting immunocompromised recipients from graft-versus-host disease.

Q59. (a) 1-D, 2-B, 3-C, 4-A .Syndrome karyotypes: Turner (45,XO), Swyer (46,XY), AIS (46,XY), and MRKH (46,XX).

Q60. (b) 1 and 4 .In seawater drowning, the aspiration of salt water leads to hyponatremia and myocardial anoxia.

Q61. (c) 1, 2, 4, 6 .Commonly used instruments in a C-section include the BP blade, Doyen's retractor, Allis forceps, and Green Armytage forceps.

Q62. (a) Endo-myocardial biopsy .Endo-myocardial biopsy is the gold standard for diagnosing myocarditis as it allows for direct histological examination of the tissue.

Q63. (a) Burking .Burking is a form of homicidal smothering where the perpetrator sits on the victim's chest while covering their nose and mouth.

Q64. (c) 7 cm .The average uterocervical length is approximately 7 cm, though it can vary based on the patient's individual factors.

Q65. (b) Asbestos .The histopathological presence of ferruginous bodies and interstitial fibrosis is characteristic of asbestosis.

Q66. (d) Moist heat .A soddened burn injury with erythema and blisters is characteristic of moist heat, such as exposure to steam or hot water.

Q67. (c) Direct invasion .Retinoblastoma primarily spreads via direct invasion to surrounding structures, most notably the optic nerve.

Q68. (b) Birbeck granules .Birbeck granules are characteristic tennis-racket-shaped inclusions seen in Langerhans cell histiocytosis under electron microscopy.

Q69. (b) Arsenic .Nausea, bloody stools, and burning sensations in the throat and stomach are symptoms consistent with acute arsenic poisoning.

Q70. (c) 1, 2 .Infertility and dysmenorrhea are the most common presenting symptoms of endometriosis.

Q71. (b) Cervical sympathetic chain .An open right eye during hanging suggests damage to the cervical sympathetic chain, leading to Horner's syndrome features.

Q72. (c) Hodgkin's lymphoma, RS cell, EBV .The presence of Reed-Sternberg cells and the association with EBV are diagnostic features of Hodgkin's lymphoma.

Q73. (b) IgE .Type I hypersensitivity reactions, such as those following a bee sting, are mediated by an increase in IgE antibodies.

Q74. (d) Evaluation of control program .The SAFE strategy for trachoma consists of Surgery, Antibiotics, Facial cleanliness, and Environmental improvement.

Q75. (a) Capsulorrhexis .Capsulorrhexis is the surgical step in cataract surgery involving the creation of a continuous circular opening in the lens capsule.

Q76. (b) Type 4 hypersensitivity reaction .The formation of caseous necrosis in tuberculosis is a result of a type IV (delayed-type) hypersensitivity reaction.

Q77. (d) If mother is IgG positive for CMV, the child is unlikely to develop an infection .Maternal IgG provides passive immunity that significantly reduces the risk of congenital CMV transmission.

Q78. (a) Vossius ring .A Vossius ring is a pigment ring on the anterior lens capsule typically resulting from blunt ocular trauma.

Q79. (a) Metronidazole .Trichomoniasis, which presents with a "strawberry cervix" and frothy discharge, is treated with metronidazole.

Q80. (c) Flow cytometry .Flow cytometry is used to confirm CLL by detecting specific cell surface markers like CD5 and CD23 on the smudge cells.

Q81. (a) Corticosteroids .In pediatric patients with severe or critical COVID-19, corticosteroids are used to manage the inflammatory response.

Q82. (a) MYC .The "starry sky" appearance in Burkitt lymphoma is driven by a translocation involving the MYC oncogene.

Q83. (b) Normal calcium and normal ALP .Osteoporosis is a decrease in bone density where serum calcium and alkaline phosphatase levels typically remain normal.

Q84. (b) Coxsackie viral meningitis and Hand Foot Mouth disease .The presence of vesicular lesions on the hands, feet, and mouth along with meningitis symptoms is characteristic of Coxsackie virus.

Q85. (c) Pulselessness .Pulselessness is a late sign of compartment syndrome; earlier signs include pain, paresthesia, and pallor.

Q86. (b) Leukemia .Leukemia is not typically associated with Paroxysmal Nocturnal Hemoglobinuria (PNH), whereas hemolysis and thrombosis are common.

Q87. (d) Hydatidiform mole .A "snowstorm" appearance on ultrasound in a patient with an enlarged uterus and spotting indicates a molar pregnancy.

Q88. (b) Total anomalous pulmonary venous circulation .In TAPVC, all four heart chambers have equal oxygen saturation due to the mixing of pulmonary and systemic blood.

Q89. (b) Traction, palmar flexion, ulnar deviation, POP .The standard reduction sequence for a Colles fracture involves restoring length via traction before positioning and casting.

Q90. (b) 1, 2, 3, and 4 .Neonatal seizures can be caused by various metabolic derangements including imbalances in sodium, calcium, and magnesium.

Q91. (d) Urine urea in mg/100 ml .In the urea clearance formula ($U \cdot V/P$), the variable 'U' represents the concentration of urea in the urine.

Q92. (b) 3, 5, 6 .Applying skeletal tibia traction requires a Steinmann pin, a Bohler's stirrup, and a Bohler Braun splint.

Q93. (a) VIP .Vasoactive Intestinal Peptide (VIP) is the mediator responsible for the relaxation of the intestinal segment distal to a food bolus.

Q94. (b) 5 .Based on the clinical parameters of the cervix and fetal station, the Bishop score is calculated as 5.

Q95. (b) 20-24 months .A child typically reaches half of their projected adult height by approximately 24 months of age.

Q96. (d) 100 mcg .For the prevention of postpartum hemorrhage, carbetocin is administered as a single 100 mcg intravenous dose.

Q97. (a) LH .The beta subunit of hCG is structurally very similar to Luteinizing Hormone (LH).

Q98. (c) 1 > 4 > 3 > 2 .The stability of external fixators ranges from the most stable (Ilizarov) to the least stable (uniplanar single rod).

Q99. (b) High estrogen .During pregnancy, high levels of circulating estrogen and progesterone inhibit the action of prolactin, preventing milk production until after delivery.

Q100. (c) Axonotmesis .Axonotmesis is a nerve injury where the internal axon is damaged while the surrounding connective tissue sheaths remain intact.

Q101. (c) 1-c, 2-d, 3-a, 4-b .In the JE virus life cycle, humans are accidental hosts, pigs are amplifiers, birds are reservoirs, and Culex is the vector.

Q102. (c) 1, 2, and 3 .Mobile Medical Units (MMUs) are generally run by the government or partnered agencies with supplies provided by the government.

Q103. (d) 1600, rf=2 .For 50 patients requiring 30 tablets each, 1600 tablets with a reorder factor of 2 provides a safe supply with a buffer.

Q104. (c) 30-300 seconds .Short-term memory refers to the retention of information for a brief period, typically lasting up to a few minutes.

Q105. (d) Serotonin .Serotonin does not increase gastric acid secretion; it is primarily stimulated by gastrin, histamine, and acetylcholine.

Q106. (a) Epithelial cell tumor .Clear cell carcinoma is a malignant subtype of ovarian epithelial cell tumors.

Q107. (d) Pressure .Pacinian corpuscles are specialized mechanoreceptors that respond specifically to deep pressure and high-frequency vibration.

Q108. (b) Calcium .Lactating females require significantly higher calcium supplementation than pregnant females to support milk production.

Q109. (b) 6 .The MET score is calculated as the ratio of exercise oxygen consumption (1500) to resting oxygen consumption (250).

Q110. (b) Hypomenorrhea .Asherman syndrome consists of intrauterine adhesions that typically lead to light periods (hypomenorrhea) or amenorrhea.

Q111. (c) C, D and E .Based on the comparative efficacy study, vaccines C, D, and E show performance comparable to the original vaccine.

Q112. (d) Sweating .When the ambient temperature (47°C) exceeds body temperature, evaporation via sweating is the only way to lose heat.

Q113. (a) Cusco's speculum .Cusco's speculum is a self-retaining bivalve instrument used for visualization during gynecological examinations.

Q114. (b) Bronchi .The medium-sized bronchi have the highest individual airway resistance due to their relatively small total cross-sectional area.

Q115. (b) Inhaled lead dust .In industrial settings, the inhalation of lead dust or fumes is the most common route of absorption leading to poisoning.

Q116. (b) Slope changes in the ESV pressure curve .A decrease in cardiac contractility is represented by a decrease in the slope of the end-systolic volume (ESV) pressure line.

Q117. (c) Chloride .In the proximal convoluted tubule, chloride concentration remains high (or increases slightly) relative to other solutes like glucose and amino acids.

Q118. (b) Exposure and response prevention .ERP is the most effective behavioral therapy for managing the repetitive compulsions of OCD.

Q119. (b) Glove paper cover .Black medical waste bins are used for general, non-biodegradable, non-infectious waste like paper covers.

Q120. (d) Cribriform plate .The marked structure on the CT scan is the cribriform plate of the ethmoid bone.

Q121. (c) 15-minute gap .A 15-minute gap between nicotine gum and acidic food or drinks is necessary as acidity reduces nicotine absorption.

Q122. (c) Histogram, dot plot .Flow cytometry data is graphically represented using histograms for single parameters and dot plots for multiple parameters.

Q123. (b) Normal, positively skewed, negatively skewed, normal with outliers .The sequence of box plots represents symmetric, right-skewed, left-skewed, and outlier-heavy distributions.

Q124. (b) CT scan .The provided image is a computed tomography scan, which uses X-rays to generate cross-sectional images of the body.

Q125. (d) PTSD .As per ICD 11, PTSD is classified under "disorders specifically associated with stress" rather than Obsessive-Compulsive Disorder.

Q126. (a) Life expectancy at birth, literacy and standard of living .The HDI is a composite index of health (life expectancy), knowledge (literacy), and standard of living (GNI).

Q127. (a) Follow up .Follow-up is a characteristic of prospective cohort studies; case-control studies are retrospective.

Q128. (c) Renal Angiomyolipoma .The imaging characteristics on CECT, especially if fat density is present, point toward a renal angiomyolipoma.

Q129. (c) Anterograde amnesia with loss of recent memory .Korsakoff syndrome is primarily characterized by a profound deficit in forming new memories (anterograde amnesia).

Q130. (b) HbsAg .The Hepatitis B vaccine is a subunit vaccine containing the Hepatitis B surface antigen.

Q131. (b) Morgagni hernia .Morgagni hernia is an anterior diaphragmatic defect that can present with intermittent abdominal pain in children.

Q132. (d) Increase in prevalence .When a drug decreases mortality (keeping people alive) without curing the disease, the prevalence of the disease increases.

Q133. (c) To classify the priority of treatment .Triage is a system used in emergencies to sort and prioritize patients based on the severity of their condition.

Q134. (a) USG .The image depicts an ultrasound scan, a modality that uses high-frequency sound waves to image internal organs.

Q135. (c) Fixed drug combination is preferred over single drugs .WHO guidelines state that single drugs are generally preferred for essential lists unless a combination offers a clear therapeutic advantage.

Q136. (c) Yolk sac and amniotic sac .The "double bleb sign" seen on early obstetric USG represents the concurrent visualization of the yolk sac and the amniotic sac.

Q137. (a) Increase the dose .Phenytoin induces the metabolism of retigabine; therefore, the dose of retigabine must be increased to maintain therapeutic levels.

Q138. (c) 1-C, 2-D, 3-A, 4-B .Matching: Hirschsprung (Biopsy), PUV (MCU), Choledochal cyst (MRCP), and Intussusception (CT).

Q139. (a) Scalp, dura, arachnoid .During a lumbar or ventricular puncture, the needle must pass through the skin/scalp, the dura mater, and the arachnoid to reach the CSF.

Q140. (a) Downregulation of CYP2C19 .Clopidogrel is a prodrug activated by the CYP2C19 enzyme; reduced activity of this enzyme leads to drug failure.

Q141. (c) Paratonsillar vein .The paratonsillar (external palatine) vein is the most common source of primary hemorrhage following a tonsillectomy.

Q142. (c) 1, 2 and 3 .Workup for a reniform abdominal mass in a child includes CECT, PET-CT, and urinary VMA (for neuroblastoma); FNAC is usually avoided.

Q143. (b) Ergotism .Ergotamine toxicity (ergotism) causes severe peripheral vasoconstriction and ischemia, often triggered by drug interactions with ART.

Q144. (d) Catalase negative, optochin sensitive .Streptococcus pneumoniae is a Gram-positive coccus identified by being catalase-negative and sensitive to optochin.

Q145. (b) USG-guided pigtail catheter drainage .Percutaneous USG-guided drainage is the preferred next step for managing a localized postoperative fluid collection.

Q146. (d) Carbol fuschin – acid – alcohol- methylene blue .This is the standard sequence for Ziehl-Neelsen staining used to identify acid-fast bacilli.

Q147. (d) Ciraparantag: Fondaparinux .Ciraparantag is not a standard specific match for fondaparinux in established clinical guidelines.

Q148. (c) Red nucleus .Fibers from the cerebellar dentate nucleus primarily terminate in the contralateral red nucleus and the thalamus.

Q149. (a) Veress needle .The Veress needle is a specialized spring-loaded needle used to safely create pneumoperitoneum for laparoscopic surgery.

Q150. (b) Beta 1,3 glucan .Mucor species do not have beta-1,3 glucan in their cell wall, distinguishing them from many other fungi.

Q151. (d) Eyes-3, Verbal -NT, Motor-6 .In an intubated patient, the verbal score is recorded as NT (not testable); opening eyes to command is 3 and moving spontaneously is 6.

Q152. (b) B .Structure B represents the spinothalamic tract, which is responsible for transmitting pain and temperature sensations.

Q153. (d) Toxoplasma gondii .The illustrated life cycle, which includes definitive feline hosts and environmental oocysts, belongs to Toxoplasma gondii.

Q154. (d) Hodgkin's lymphoma .Nivolumab is a PD-1 inhibitor used in the treatment of patients with classical Hodgkin's lymphoma.

Q155. (d) Axillary nerve .The axillary nerve is at risk during deltoid injections; its injury results in deltoid atrophy and loss of shoulder contour.

Q156. (a) Gonorrhea .Gonorrhea is usually treated with single-agent antibiotics, whereas TB and Malaria require combination therapy to prevent resistance.

Q157. (a) Adjuvant radiotherapy .Radiotherapy is recommended after breast-conserving surgery for high-grade DCIS to reduce the risk of local recurrence.

Q158. (b) Enteropathogenic Escherichia coli .EPEC is known for producing "attachment and effacement" lesions on the intestinal mucosa.

Q159. (d) 90 degrees .For effective interrupted suturing, the needle should enter the skin at a 90-degree angle to ensure proper edge eversion.

Q160. (d) A .Site A represents the cribriform plate, the pathway through which the virus can enter the brain via the olfactory nerve.

Q161. (d) 1-C, 2-D, 3-B, 4-A .Matches the egg morphology: H. nana (C), Ascaris (D), Hookworm (B), and Taenia (A).

Q162. (b) Hollow viscus perforation .In the setting of abdominal trauma, the presence of free gas under the diaphragm on X-ray is diagnostic of hollow viscus perforation.

Q163. (b) 2 .Area 2 indicates the jugular foramen; damage to the nerves passing through it (IX, X, XI) causes swallowing and speech difficulties.

Q164. (b) 2+ .An IHC result of 2+ for HER2 is considered equivocal and necessitates confirmation of gene amplification via FISH.

Q165. (a) Nasociliary nerve .The image depicts a block of the nasociliary nerve, which provides sensory innervation to parts of the nose and orbit.

Q166. (c) Supracardinal vein .The azygos venous system develops from the embryonic supracardinal veins.

Q167. (a) Transurethral resection of the tumour .TURBT is the preferred initial management for low-grade, non-invasive transitional cell carcinoma of the bladder.

Q168. (c) 3'UTR .MicroRNAs (miRNAs) usually bind to the 3' untranslated region of target mRNAs to repress translation or induce degradation.

Q169. (a) 1,2,3 and 4 .The inferior thyroid artery provides blood supply to the thyroid, parathyroids, esophagus, and thymus.

Q170. (d) 1,3,4 .Screening for colon cancer is primarily done via colonoscopy or fecal tests, not DRE; the other statements regarding screening are true.

Q171. (a) 1 .The pelvic diaphragm is the muscular layer primarily formed by the levator ani (marked as 1).

Q172. (a) Tip of nose to ear lobule to xiphisternum .This is the standard external measurement used to estimate the length of the nasogastric tube needed to reach the stomach.

Q173. (c) Moving pH away from isoelectric pH .Proteins are least soluble at their isoelectric point; moving the pH away from this value increases their solubility.

Q174. (b) Half-life remains the same and plasma concentration doubles .In first-order kinetics, the elimination half-life is independent of the dose, while the steady-state concentration is proportional to it.

Q175. (c) 2 .The third part of the vertebral artery is the section that travels along the posterior arch of the atlas (C1).

Q176. (c) 1,2,3 .The Rutherford Morrison incision involves cutting the external oblique, internal oblique, and transversus abdominis.

Q177. (a) Acrocentric .Chromosomes with centromeres near one end and very small short arms (like the one marked) are called acrocentric.

Q178. (c) IV .The trochlear nerve (CN IV) is the cranial nerve that passes through the superior orbital fissure.

Q179. (d) Bipolar disorder .Risperidone is FDA-approved for the treatment of bipolar disorder, making it an on-label use.

Q180. (b) ALS .Amyotrophic lateral sclerosis presents with a combination of upper motor neuron and lower motor neuron signs without sensory loss.

Q181. (b) Fixed central airway obstruction .Flattening of both the inspiratory and expiratory limbs of the flow-volume loop is characteristic of a fixed central obstruction.

Q182. (a) 1,2 .Arterial pH is the gold standard for acid-base assessment, though venous pH is sometimes utilized as a substitute.

Q183. (d) 120 minutes .A 2-hour (120-minute) window is required between taking sucralfate and phenytoin to prevent absorption interference.

Q184. (a) The inhibitor can bind with any site resulting in suicidal inhibition .Suicide inhibitors are highly specific; they must bind to the enzyme's active site to be activated and cause inhibition.

Q185. (b) RNA-dependent RNA polymerase inhibition .Remdesivir acts by inhibiting the viral RNA-dependent RNA polymerase, stopping the replication of the virus.

Q186. (a) Ritonavir .Ritonavir increases the bioavailability of saquinavir by inhibiting the CYP3A4 enzymes that normally metabolize it.

Q187. (c) 1 and 2 .Chest X-ray and BNP levels are the most useful investigations to evaluate for TRALI and differentiate it from cardiogenic edema.

Q188. (a) Inhibition of calcineurin .Cyclosporine exerts its immunosuppressive effect by inhibiting calcineurin, which blocks T-cell activation.

Q189. (b) 2 .Structure 2 corresponds to the right atrium/right heart, which when failing, leads to systemic venous congestion (high JVP, large liver).

Q190. (d) Haemophilus produces beta lactamase, hence resistant to ampicillin .H. influenzae resistance is most commonly mediated by the production of beta-lactamase enzymes.

Q191. (a) Pap smear .The depicted instruments (Cusco's speculum, brush, spatula) are used for cervical cytology collection in a Pap smear.

Q192. (c) Laparoscopic tubal ligation .Tubal ligation is a permanent surgical sterilization procedure, whereas LARCs are long-acting but fully reversible.

Q193. (b) 2, 3, 4 .Medical management of PCOS focuses on lifestyle changes, combined contraceptives, and anti-androgens.

Q194. (a) Left occipital lobe .The visual field defect shown (right homonymous hemianopia) is caused by a lesion in the left occipital lobe.

Q195. (b) Iodine test .The iodine test detects starch; the phosphatase and methylene blue tests are the ones used to check pasteurization efficiency.

Q196. (d) 4 .If a drug keeps patients alive longer without curing them, the prevalence (existing cases) of the disease will increase.

Q197. (a) Capnography .The yellow tracing on the anesthesia monitor is the capnogram, which monitors the partial pressure of exhaled carbon dioxide.

Q198. (b) Vilazodone .Vilazodone is a novel antidepressant that functions as both a serotonin reuptake inhibitor and a 5-HT_{1A} receptor partial agonist.

Q199. (a) Varenicline .Varenicline is considered the most effective oral pharmacotherapy for achieving long-term smoking cessation.

Q200. (c) Levopropoxyphene .Levopropoxyphene is an opioid derivative used as a centrally acting cough suppressant.