NEET PG 2025 Question Paper

147 recall questions with answers and explanations.

Recall honesty note: NBEMS does not release official papers, so these are memory-based recall questions, not official papers. Image-based questions are excluded for now because the bank's images are currently unavailable.

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Question 1. What are the contents of Umbilical cord?

A. 2 arteries, 2 veins

B. 1 artery, 2 veins

C. 2 arteries, 1 vein

D. 1 artery, 1 vein

Correct answer: C

The umbilical cord is the lifeline connecting the fetus to the placenta. In a normal, fully developed umbilical cord, there are three blood vessels encased in a gelatinous substance called Wharton's jelly. These vessels are two umbilical arteries and one umbilical vein. The two umbilical arteries carry deoxygenated blood and waste products away from the fetus to the placenta. The single umbilical vein carries oxygenated, nutrient-rich blood from the placenta to the fetus. Initially, there are two umbilical veins, but the right umbilical vein typically obliterates early in fetal development, leaving only the left one to persist. The presence of only a single umbilical artery instead of two can sometimes be associated with other congenital anomalies.

Question 2. Which nerve root level is responsible for meralgia paresthetica?

A. T12 and L1

B. L2 and L3

C. L2, L3 and L4

D. L1 and L2

Correct answer: B

Meralgia paresthetica is a clinical syndrome characterized by pain, tingling, numbness, or burning sensations over the anterolateral aspect of the thigh. This condition is caused by the entrapment or compression of the lateral femoral cutaneous nerve. This nerve is a purely sensory nerve that arises from the lumbar plexus. Specifically, it is formed from the dorsal divisions of the L2 and L3 spinal nerve roots. The nerve emerges from the lateral border of the psoas major muscle, travels across the iliacus muscle, and then passes under or through the inguinal ligament near the anterior superior iliac

Question 3. A girl presents with a foot injury following a history of forceful eversion of the foot. Which structure is most likely to be affected?

A. Anterior talofibular ligament

B. Deltoid ligament

C. Posterior talofibular ligament

D. Calcaneofibular ligament

Correct answer: B

Ankle sprains are common injuries, but the ligaments affected depend on the mechanism of injury. The vast majority of ankle sprains (over 85%) are inversion injuries, where the foot rolls inward, stressing the ligaments on the lateral (outer) side of the ankle. These are the anterior talofibular ligament (A), the posterior talofibular ligament (C), and the calcaneofibular ligament (D). In contrast, a forceful eversion injury, where the foot is twisted outward, puts stress on the ligaments on the medial (inner) side of the ankle. The primary stabilizer on the medial side is the deltoid ligament. This is a very strong, fan-shaped ligament complex that connects the medial malleolus of the tibia to the talus, calcaneus, and navicular bones. A significant eversion force is required to sprain or tear the deltoid ligament.

Question 4. A patient presents with muscle wasting, hypotonia, and weakness of the left hand, with impaired fine motor skills such as kneading dough. Which anatomical structure is most likely affected?

A. Right anterior horn cells in spinal cord

B. Pyramidical lesion

C. Internal Capsule

D. Left Corticospinal tract in the cervical cord

Correct answer: A

The patient's symptoms—muscle wasting (atrophy), reduced tone (hypotonia/flaccidity), and weakness—are the classic signs of a lower motor neuron (LMN) lesion. LMNs are the final common pathway connecting the central nervous system to the muscles. The cell bodies of the LMNs that innervate the limbs are located in the anterior (ventral) horn of the spinal cord. Since the symptoms are confined to the left hand, the lesion must be affecting the anterior horn cells in the cervical spinal cord that supply the muscles of that hand. The corticospinal tracts decussate (cross over) in the medulla. Therefore, a lesion in the right cerebral hemisphere would cause deficits on the left side of the body. While a pyramidal or internal capsule lesion (B, C, D) would cause left-sided weakness, these are all upper motor neuron lesions, which would result in spasticity and hyperreflexia, not atrophy and reduced tone.

Question 5. During surgical removal of the submandibular gland, a structure running superior to the posterior belly of the digastric muscle is accidentally damaged. Which structure is most likely to have been injured?

A. Lingual nerve

B. Marginal Mandibular Nerve

C. Trigeminal nerve

D. Hypoglossal nerve

Correct answer: B

The marginal mandibular branch of the facial nerve has a clinically important and vulnerable course. After emerging from the parotid gland, it runs forward, deep to the platysma muscle, along or just below the inferior border of the mandible. It has a crucial relationship with the submandibular gland and the posterior belly of the digastric muscle. While its exact course is variable, it frequently loops down over the submandibular gland before ascending to supply the depressor muscles of the lower lip. An injury to this nerve, which can occur during submandibular gland resection or other neck surgeries, results in a characteristic facial asymmetry, with an inability to depress the corner of the mouth, leading to a lopsided smile. The hypoglossal nerve (D) and lingual nerve (A) are located deeper in this region.

Question 6. Anti-mitochondrial antibody (AMA) is most commonly seen in :

A. Autoimmune hepatitis

B. Primary biliary cholangitis

C. Primary sclerosing cholangitis

D. Systemic lupus erythematosus

Correct answer: B

Anti-mitochondrial antibodies (AMAs) are the serological hallmark of Primary Biliary Cholangitis (PBC), an autoimmune liver disease characterized by the chronic, progressive destruction of the small intrahepatic bile ducts. AMAs are present in approximately 90-95% of patients with PBC and have a very high specificity for the disease. The primary target of these autoantibodies is the E2 component of the pyruvate dehydrogenase complex (PDC-E2), located on the inner mitochondrial membrane. The presence of AMA, particularly at a high titer, in a patient with a cholestatic pattern of liver enzyme elevation (predominantly elevated alkaline phosphatase) is virtually diagnostic of PBC. In contrast, autoimmune hepatitis (A) is associated with anti-nuclear antibodies (ANA) and anti-smooth muscle antibodies (ASMA). Primary sclerosing cholangitis (C) is often associated with perinuclear anti-neutrophil cytoplasmic antibodies (p-ANCA).

Question 7. Which of the following conditions most commonly follows this pattern of inheritance?

A. Prader willi syndrome

B. Marfan syndrome

C. Kearns-Sayre syndrome

D. Duchenne muscular dystrophy

Correct answer: B

No explanation is available for this recall question yet.

Question 8. Which form of cell death is characterized by activation of caspase enzymes?

A. Necrosis and Apoptosis

B. Apoptosis and Pyroptosis

C. Apoptosis and Necroptosis

D. Apoptosis only (+ Pyroptosis)

Correct answer: B

Caspases are a family of cysteine proteases that are the central executioners of programmed cell death.1. Apoptosis is the classic form of programmed cell death and is fundamentally a caspase-

Question 9. A 68-year-old man presents with persistent fatigue and generalized lymphadenopathy. His complete blood count shows leukocytosis with an absolute lymphocyte count of 35,000/µL. Which investigation is the test of choice to confirm the diagnosis and assess CD markers in suspected chronic lymphocytic leukemia?

A. Bone marrow biopsy

B. Flow cytometry of peripheral blood

C. Serum LDH levels

D. Lymph node excisional biopsy

Correct answer: B

The patient's presentation with a persistent, marked lymphocytosis (lymphocyte count >5,000/µL) and lymphadenopathy in an older adult is highly suspicious for Chronic Lymphocytic Leukemia (CLL). In most cases, the diagnosis of CLL can be definitively made without the need for a bone marrow or lymph node biopsy. The investigation of choice for confirming the diagnosis and establishing the characteristic immunophenotype is flow cytometry performed on a peripheral blood sample. This technique uses fluorescently labeled antibodies to identify a specific profile

Question 10. A patient presents with cough, chest pain, and dyspnea. Imaging and pathology show granuloma formation with giant cells containing stellate inclusions. What is the most likely diagnosis?

A. Tuberculosis

B. Sarcoidosis

C. Lung cancer

D. Fungal infection

Correct answer: B

The key to this diagnosis is the specific histopathological findings described. Sarcoidosis is a multisystem inflammatory disease of unknown etiology characterized by the formation of non-caseating epithelioid granulomas in various organs, most commonly the lungs and lymph

nodes. While granuloma formation can be seen in other conditions like tuberculosis, the granulomas in sarcoidosis have specific microscopic features. Within the giant cells of these granulomas, two types of cytoplasmic inclusions can be found : Schaumann bodies, which are laminated concretions of calcium and protein, and asteroid bodies, which are star-shaped or stellate eosinophilic inclusions. The presence of these specific inclusions within a non-caseating granuloma is highly characteristic of, though not entirely specific for, sarcoidosis. In tuberculosis (A), the granulomas are typically caseating.

Question 11. A very tall man presents with visual disturbances, and ophthalmologic examination reveals ectopia lentis. Which gene defect is most likely responsible for this condition?

A. FBN1 (chromosome 15)

B. COL1A1

C. FGFR3

D. PAX6

Correct answer: A

No explanation is available for this recall question yet.

Question 12. A patient presents with hearing impairment and balance disturbances. Histopathological examination of the lesion reveals Antoni A and Antoni B areas along with Verocay bodies. What is the most likely diagnosis?

A. Schwannoma

B. Ependymoma

C. Meningioma

D. Medulloblastoma

Correct answer: A

The patient's symptoms of unilateral hearing loss and balance problems point to a tumor in the cerebellopontine angle, most likely affecting the vestibulocochlear nerve (CN VIII). The histopathological description is pathognomonic for a schwannoma. Schwannomas are benign tumors arising from Schwann cells, which myelinate peripheral nerves. The classic histology is a biphasic pattern with two distinct components :1. Antoni A areas : These are dense, hypercellular regions composed of spindle-shaped Schwann cells arranged in fascicles and palisades.2. Antoni B areas : These are loose, hypocellular, myxoid regions.The most specific diagnostic feature, found within the Antoni A areas, is the presence of Verocay bodies. These are structures formed by two parallel rows of palisading nuclei

Question 13. A child presents with visual disturbances and delayed growth. Imaging shows a suprasellar mass, and histopathology reveals wet keratin with compact, eosinophilic anucleate keratin. What is the most likely diagnosis?

A. Medulloblastoma

B. Rathke pouch cyst

C. Pituitary adenoma

D. Craniopharyngioma

Correct answer: D

The patient's symptoms of visual disturbances (due to compression of the optic chiasm) and growth failure (due to compression of the pituitary stalk/gland) are characteristic of a suprasellar mass in a child. The histopathological findings are definitive. Craniopharyngiomas are benign, slow-growing tumors that arise from remnants of Rathke's pouch. The most common type in children is the adamantinomatous craniopharyngioma. A pathognomonic histological feature of this tumor is the presence of nodules of "wet keratin." This is composed of nests of squamous epithelium undergoing abrupt keratinization, forming pale, anucleated, eosinophilic masses that are soft and tend to flake away during processing. This finding, often accompanied by calcification and a "machine oil-like" cystic fluid, is diagnostic of craniopharyngioma. A Rathke's cleft cyst (B) has a different lining, and pituitary adenomas (C) are rare in this age group and have a different histology.

Question 14. Which laboratory technique is most commonly used to compare and quantify CD (cluster of differentiation) markers on cells?

A. ELISA

B. Western blot

C. Flow cytometry

D. IHC

Correct answer: C

Flow cytometry is the gold-standard laboratory technique for the analysis of cell surface and

Question 15. Anti SCL 70 antibody is most strongly associated with

A. GAVE

B. Calcinosis cutis

C. Interstitial lung disease

D. Myositis

Correct answer: C

Anti-Scl-70 antibodies, also known as anti-topoisomerase I antibodies, are a highly specific serological marker for systemic sclerosis (scleroderma). The presence of these antibodies is particularly and strongly associated with the diffuse cutaneous subtype of the disease. Furthermore, within this subtype, anti-Scl-70 positivity is a significant predictor of a more severe disease course and specific organ involvement. The strongest of these associations is with the development of interstitial lung disease (ILD), which is a major cause of morbidity and mortality in patients with systemic sclerosis. Patients who are positive for anti-Scl-70 antibodies

have a much higher risk of developing progressive pulmonary fibrosis compared to those who are negative or have other autoantibodies (like anti-centromere antibodies). Gastric antral vascular ectasia (GAVE) (A) and calcinosis (B) are features of

Question 16. A 30-year-old man presents with a painless testicular mass. Ultrasound reveals a well-circumscribed, homogeneous, non-hemorrhagic tumor, and histopathological features are shown. What is the most likely diagnosis?

A. Yolk sac tumor

B. Choriocarcinoma

C. Teratoma

D. Seminoma

Correct answer: D

The patient's age and presentation with a painless testicular mass are classic for a testicular germ cell tumor. The ultrasound findings of a well-circumscribed, homogeneous mass are highly suggestive of a seminoma, which is the most common type of testicular germ cell tumor. The provided histology image confirms this diagnosis. The image shows the characteristic features of a classic seminoma : large, uniform tumor cells with distinct cell borders, clear or eosinophilic cytoplasm (rich in glycogen), and a large central nucleus with a prominent nucleolus. These tumor cells are arranged in sheets or lobules that are separated by delicate fibrous septa. A key feature is that these septa are typically infiltrated by lymphocytes, a finding that is highly characteristic of seminoma. This uniform "fried egg" appearance and the lymphocytic infiltrate are diagnostic.

Question 17. A lymphoma composed of centrocytes and centroblasts that shows BCL2 positivity and CD10 expression is most commonly associated with which chromosomal translocation?

A. t(2;5)

B. t(11;14)

C. t(14;18)

D. t(8;14)

Correct answer: C

The description provided is the classic profile of Follicular Lymphoma. This is a common type of indolent B-cell non-Hodgkin lymphoma. Histologically, it is characterized by a nodular (follicular) growth pattern composed of a mixture of small, cleaved cells (centrocytes)

Question 18. A middle-aged woman presents with dry eyes and dry mouth, and laboratory evaluation shows positive anti-Ro (SSA) and anti-La (SSB) antibodies. What is the most likely underlying pathological mechanism responsible for her condition?

A. Destruction of exocrine glands by neutrophils

B. IgE-mediated hypersensitivity reaction

C. Lymphocytic infiltration and destruction of salivary and lacrimal glands

D. Deposition of amyloid in salivary glands

Correct answer: C

The patient's symptoms of sicca (dry eyes or keratoconjunctivitis sicca, and dry mouth or xerostomia), combined with the presence of positive anti-Ro (SSA) and anti-La (SSB) autoantibodies, are diagnostic of Sjögren's syndrome. This is a chronic, systemic autoimmune disease. The underlying pathological mechanism is an autoimmune attack on the exocrine glands, primarily the lacrimal and salivary glands. A biopsy of a minor salivary gland from the lip is a key diagnostic test. The characteristic histopathological finding is a dense, focal lymphocytic infiltration of the glandular tissue, primarily composed of CD4+ T-cells and B-cells, which often form germinal center-like structures. This chronic autoimmune inflammation leads to the progressive destruction of the acinar and ductal cells of the

Question 19. A 68-year-old man presents with bleeding, and peripheral blood smear reveals the presence of a faggot cell. Which chromosomal translocation is most commonly associated with this finding?

A. t(15;17)

B. t(14;18)

C. t(11;14)

D. t(8,21)

Correct answer: A

The patient's presentation with bleeding suggests a coagulopathy, a common feature of a specific type of acute leukemia. The key diagnostic finding is the presence of a "faggot cell" on the peripheral blood smear. A faggot cell is a pathognomonic finding in Acute Promyelocytic Leukemia (APL), also known as AML M3. It is a malignant promyelocyte whose cytoplasm is packed with numerous Auer rods, which are abnormal, needle-like azurophilic granules, often arranged in bundles or "faggots." APL is a medical emergency due to its strong association with life-threatening disseminated intravascular coagulation (DIC). The defining genetic abnormality in virtually all cases of APL is the specific chromosomal translocation t(15;17)(q24;q21). This translocation creates a fusion gene between the PML gene on chromosome 15 and the retinoic acid receptor-alpha (RARA) gene on chromosome 17, which is the underlying driver of the disease.

Question 20. A patient presents with a neck mass associated with painful swallowing and difficulty breathing. Histopathological examination reveals amyloid deposition. What is the most likely diagnosis?

A. Papillary thyroid carcinoma

B. Follicular thyroid carcinoma

C. Medullary thyroid carcinoma

D. Anaplastic thyroid carcinoma

Correct answer: C

A neck mass presenting with compressive symptoms like odynophagia (painful swallowing) and dyspnea is concerning for a thyroid malignancy. The key to the diagnosis is the histopathological finding of amyloid

Question 21. A patient is diagnosed with acute myelogenous leukemia (AML) M3. Which characteristic chromosomal translocation is associated with this subtype?

A. t(9;22)

B. t(8;21)

C. t(15;17)

D. t(11;14)

Correct answer: C

This is a duplicate of a previous question. AML M3 is the designation in the older French-American-British (FAB) classification for Acute Promyelocytic Leukemia (APL). APL is a distinct subtype of Acute Myeloid Leukemia that is characterized by the proliferation of malignant promyelocytes. It is a medical emergency because of its strong association with disseminated intravascular coagulation (DIC). The defining and pathognomonic genetic lesion in over 95% of cases of APL is the specific balanced reciprocal translocation t(15;17)(q24;q21). This translocation creates a fusion gene between the PML (promyelocytic leukemia) gene on chromosome 15 and the RARA (retinoic acid receptor-alpha) gene on chromosome 17. The resulting PML-RARA fusion protein is the oncogenic driver of the disease and is the target for the differentiating agent, all-trans retinoic acid (ATRA).

Question 22. In Hurler syndrome, which glycosaminoglycans accumulate in tissues and lead to organ enlargement?

A. Keratan sulfate and dermatan sulfate

B. Keratan sulfate and heparan sulfate

C. Heparan sulfate and dermatan sulfate

D. Keratan sulfate and hyaluronic acid

Correct answer: C

Hurler syndrome, also known as Mucopolysaccharidosis Type I (MPS I), is an autosomal recessive lysosomal storage disorder. It is caused by a deficiency of the enzyme alpha-L-iduronidase. This enzyme is essential for the stepwise degradation of two specific glycosaminoglycans (GAGs), also known as mucopolysaccharides. In the absence of this enzyme, its substrates, heparan sulfate and dermatan sulfate, cannot be broken down and progressively accumulate within the lysosomes of cells throughout the body. This lysosomal

storage leads to cellular dysfunction, organomegaly (hepatosplenomegaly), skeletal deformities (dysostosis multiplex), corneal clouding, and progressive neurological deterioration. Accumulation of keratan sulfate (A, B, D) is characteristic of Morquio syndrome (MPS IV).

Question 23. A child presents with gum bleeding, perifollicular hemorrhages, petechiae, and recurrent fractures. Deficiency of which enzyme is most likely responsible for these findings?

A. Lysyl oxidase

B. Prolyl hydroxylase

C. Tyrosinase

D. Alkaline phosphatase

Correct answer: B

No explanation is available for this recall question yet.

Question 24. After surviving for five days without food, what becomes the primary energy source for the brain during this prolonged fasting state?

A. Gluconeogenesis

B. Glycogenolysis

C. Ketosis

D. Lipolysis

Correct answer: C

The brain is an obligate glucose user under normal conditions. During prolonged fasting (starvation), after liver glycogen stores are depleted (within ~24 hours), the body must find alternative fuel sources to preserve protein and supply the brain. The primary adaptation is the process of ketosis. The liver ramps up the beta-oxidation of fatty acids released from adipose tissue (lipolysis, D). This produces a large amount of acetyl-CoA, which is then converted into ketone bodies (acetoacetate and

Question 25. A patient has elevated phenylalanine levels despite normal phenylalanine hydroxylase activity. Deficiency of which cofactor is most likely responsible for this finding?

A. Tetrahydrofolate

B. Tetrahydrobiopterin (BH4)

C. Thiamine

D. Pyridoxine

Correct answer: B

The enzyme phenylalanine hydroxylase (PAH) catalyzes the conversion of phenylalanine to tyrosine. This reaction requires a specific cofactor, tetrahydrobiopterin (BH4). In classic Phenylketonuria (PKU), the PAH enzyme itself is deficient. However, a less common cause of

hyperphenylalaninemia is a defect in the synthesis or recycling of the BH4 cofactor. This is known as malignant PKU. In these cases, the PAH enzyme protein is normal, but it cannot function due to the lack of its essential cofactor. BH4 is also a required cofactor for the enzymes tyrosine hydroxylase and tryptophan hydroxylase, which are involved in the synthesis of the neurotransmitters dopamine and serotonin. Therefore, BH4 deficiency leads not only to high phenylalanine levels but also to a severe neurological disease that does not respond to a low-phenylalanine diet alone.

Question 26. A patient with vitamin B12 deficiency presents with anemia, a positive Romberg sign, and elevated homocysteine levels. Which amino acid is most likely deficient?

A. Cysteine

B. Methionine

C. Tyrosine

D. Glutamate

Correct answer: B

The conversion of the amino acid homocysteine to methionine is a crucial step in one-carbon metabolism. This reaction is catalyzed by the enzyme methionine synthase. This enzyme requires Vitamin B12 (in the form of methylcobalamin) as an essential cofactor. In Vitamin B12 deficiency, the activity of methionine synthase is impaired. This leads to two major biochemical consequences : a buildup of the substrate, homocysteine, in the blood (elevated homocysteine), and a deficiency of the product, methionine. Methionine is an essential amino acid required for protein synthesis and for the production of S-adenosylmethionine (SAM), the universal methyl donor for numerous critical methylation reactions in the body, including the synthesis of myelin. The neurological symptoms of B12 deficiency (like the positive Romberg sign, indicating proprioceptive loss) may be related to this impaired methylation.

Question 27. A patient receiving long-term hydrochlorothiazide therapy develops neuropathy, heart failure, and symmetrical paresthesia. Which vitamin or nutrient deficiency is most likely the cause of these symptoms?

A. Selenium

B. Thiamine

C. Vitamin B12

D. Zinc

Correct answer: B

Long-term use of loop diuretics and, to a lesser extent, thiazide diuretics like hydrochlorothiazide, can increase the urinary excretion of thiamine (Vitamin B1), leading to a risk of thiamine deficiency, particularly in patients with other risk factors like heart failure. The clinical presentation described is classic for beriberi, the disease caused by severe thiamine

deficiency. The symmetrical sensory peripheral neuropathy (paresthesia) is a feature of "dry" beriberi. The development of high-output heart failure with edema is the hallmark of "wet" beriberi. Thiamine is a critical cofactor for several key enzymes in carbohydrate metabolism, and its deficiency impairs cellular energy production, leading to both neurological

Question 28. A frameshift mutation caused by insertion of a nucleotide at the 4th position of a 900-base mRNA occurs. What is the most likely consequence of this mutation?

A. No change in the final protein

B. Partial protein production

C. Complete change in protein production

D. No change due to RNA editing

Correct answer: C

The genetic code is read in non-overlapping triplets of nucleotides called codons. A frameshift mutation occurs when the number of inserted or deleted nucleotides is not a multiple of three. In this case, a single nucleotide is inserted at position 4. This is highly disruptive because it shifts the reading frame for the entire downstream sequence of the mRNA. The insertion at position 4 will alter the second codon (bases 4, 5, 6) and every subsequent codon thereafter. This will lead to the incorporation of a completely different sequence of amino acids from that point onward, resulting in a complete change in the protein product. Furthermore, a frameshift mutation often introduces a premature stop codon, which would lead to the truncation of the protein. The final protein will be completely different and almost certainly non-functional.

Question 29. patient develops skin cancer along with progressively increased hyperpigmentation after sun exposure. Which DNA repair mechanism is most likely defective?

A. Nucleotide excision repair

B. Base excision repair

C. Non-homologous end joining (NHEJ)

D. Mismatch repair

Correct answer: A

The clinical presentation is characteristic of Xeroderma Pigmentosum (XP), a rare autosomal recessive genetic disorder. The primary cause of DNA damage from ultraviolet (UV) radiation in sunlight is the formation of bulky

Question 30. A patient presents with orange-colored tonsils, a triglyceride level of 140 mg/dL, and markedly reduced HDL cholesterol (5 mg/dL). What is the most likely diagnosis?

A. Familial hypercholesterolemia

B. Tangier disease

C. Type I hyperlipoproteinemia

D. Abetalipoproteinemia

Correct answer: B

The combination of pathognomonic clinical and laboratory findings is diagnostic of Tangier disease. This is a rare autosomal recessive disorder characterized by a severe deficiency or absence of high-density lipoprotein (HDL) cholesterol in the blood. The underlying genetic defect is in the ABCA1 gene, which codes for a transporter that is essential for the efflux of cholesterol from peripheral cells to form HDL particles. The hallmark laboratory finding is extremely low HDL levels (often <5 mg/dL) with normal or low LDL and moderately elevated triglycerides. The clinical hallmark is the deposition of cholesteryl esters in the reticuloendothelial system, which causes enlarged, orange-yellow colored tonsils, as well as hepatosplenomegaly and a peripheral neuropathy. Familial hypercholesterolemia (A) involves high LDL, and Type I hyperlipoproteinemia (C) involves extremely high triglycerides.

Question 31. A 10-year-old child presents with markedly elevated total cholesterol, tendon xanthomas, and a positive family history of similar symptoms, with normal triglyceride levels. MEDINK CHAPTER 03_BIOCHEMISTRY Which type of familial dyslipidemia is most likely responsible?

A. Type I

B. Type IIa

C. Type IIb

D. Type II

Correct answer: B

This clinical presentation is classic for Familial Hypercholesterolemia (FH), which corresponds to Type IIa in the Fredrickson classification of dyslipidemias. FH is an autosomal dominant genetic disorder most commonly caused by mutations in the LDL receptor gene. The defective receptors lead to impaired clearance of Low-Density Lipoprotein (LDL) from the circulation, resulting in markedly elevated levels of LDL cholesterol (and thus high total cholesterol) from birth. A key clinical sign is the deposition of this excess cholesterol in various tissues, leading to the formation of tendon xanthomas (cholesterol deposits in tendons, especially the Achilles and extensor tendons of the hand). Triglyceride levels are characteristically normal in Type IIa. The family history is also consistent with an autosomal dominant disorder. Type IIb also involves high LDL but with the addition of high triglycerides. Type I involves high chylomicrons and triglycerides.

Question 32. When evaluating a syndromic condition such as meningitis, which PCR-based technique is most suitable for making the diagnosis?

A. Multiplex PCR

B. Uniplex PCR

C. Attributed PCR

D. Nested PCR

Correct answer: A

Syndromic testing refers to the approach of simultaneously testing for multiple pathogens that can cause a similar clinical syndrome. For a syndrome like meningitis, the potential causative agents can be numerous, including various bacteria, viruses, and fungi. A multiplex PCR assay is the ideal technology for this application. Multiplex PCR allows for the simultaneous amplification of many different target nucleic acid sequences in a single reaction

Question 33. A 45-year-old man is evaluated for electrolyte imbalance : Na+ = 130 mmol/L, Cl- = 84 mmol/L, HCO3- = 16 mmol/L What is his anion-gap?

A. 26

B. 30

C. 18

D. 22

Correct answer: B

The serum anion gap is a calculated value that is used to help determine the cause of metabolic acidosis. It represents the concentration of unmeasured anions in the plasma. The formula is :Anion Gap = [Na+] - ([Cl-] + [HCO3-])Given the patient's electrolyte values :[Na+] = 130 mmol/L[Cl-] = 84 mmol/L[HCO3-] = 16 mmol/LPlugging these values into the formula :Anion Gap = 130 - (84 + 16)Anion Gap = 130 - 100Anion Gap = 30 mmol/LA normal anion gap is typically in the range of 8-12 mmol/L. An anion gap of 30 is significantly elevated, indicating the presence of a high anion gap metabolic acidosis.

Question 34. A patient has the following capillary Starling forces : capillary hydrostatic pressure of 8 mmHg, capillary oncotic pressure of 7 mmHg, and interstitial oncotic pressure of mmHg. Assuming there is no net fluid movement across the capillary wall, what must be the interstitial hydrostatic pressure?

A. 0 mmHg

B. +1 mmHg

C. +2 mmHg

D. -2 mmHg

Correct answer: D

The movement of fluid across a capillary wall is governed by the balance of hydrostatic and oncotic pressures, as described by the Starling equation. The net filtration pressure is calculated as :Net Filtration Pressure = (Forces favoring filtration) - (Forces favoring absorption)Net Filtration Pressure = (Pc +πi) - (Pi + πc)Where :Pc = Capillary hydrostatic pressure (18 mmHg)πi = Interstitial oncotic pressure (7 mmHg)Pi = Interstitial hydrostatic

pressure (Unknown)πc = Capillary oncotic pressure (27 mmHg)If there is no net movement of fluid, the Net Filtration Pressure is zero.0 = (18 + 7) - (Pi + 27)0 = 25 - Pi - 270 = -2 - PiPi = -2 mmHgTherefore, the interstitial hydrostatic pressure must be -2 mmHg to achieve equilibrium where there is no net fluid movement.

Question 35. A patient ascends to a high altitude of 700 meters and develops headache, nausea, dyspnea, and dizziness. What physiological mechanism best explains the development of these symptoms?

A. Hypoxia causing vasodilation

B. Hypoxia causing vasoconstriction

C. Metabolic acidosis causing edema

D. high PO2 causing vasoconstriction

Correct answer: A

The symptoms described are characteristic of Acute Mountain Sickness (AMS), which occurs due to rapid ascent to high altitudes without adequate acclimatization. The primary trigger for AMS is the reduced partial pressure of oxygen in the inspired air, leading to systemic hypobaric hypoxia. The brain is particularly sensitive to low oxygen levels. In response to this hypoxia, the cerebral blood vessels undergo vasodilation to increase blood flow and oxygen delivery to the brain tissue. This vasodilation leads to increased intracranial pressure and vascular leakage (cerebral edema), which manifests clinically as a headache, the hallmark symptom of AMS. Other symptoms like nausea, dizziness, and dyspnea are also related to the body's response to hypoxia. In contrast, hypoxia causes pulmonary vasoconstriction (Option B), not systemic vasoconstriction. The initial respiratory response is hyperventilation, leading to respiratory alkalosis, not metabolic acidosis (Option C).

Question 36. In an experimental setting, blood glucose levels are raised to two to three times the normal value and maintained at that level. What is the expected pattern of insulin secretion in response to this change?

A. Rapid rise followed by a fall

B. Gradual rise followed by a fall

C. Remains persistently elevated

D. Initial rise followed by sustained elevation

Correct answer: D

The secretion of insulin from pancreatic beta-cells in response to a sustained hyperglycemic stimulus follows a characteristic biphasic pattern. The first phase is a rapid, sharp spike in insulin release that occurs within minutes of the glucose challenge. This initial burst is due to the secretion of pre-synthesized insulin stored in granules that are immediately ready for release. Following this initial peak, insulin levels may

Question 37. What type of acid–base disturbance is expected in a person trekking at high altitude as a result of hyperventilation?

A. Metabolic acidosis

B. Metabolic alkalosis

C. Respiratory acidosis

D. Respiratory alkalosis

Correct answer: D

At high altitudes, the partial pressure of oxygen in the ambient air is low, leading to systemic hypoxia. The peripheral chemoreceptors (carotid and aortic bodies) detect this drop in arterial PO_2 and stimulate the respiratory center in the brainstem to increase the rate and depth of breathing. This response, known as hyperventilation, is a compensatory mechanism to increase oxygen intake. However, this increased ventilation also leads to excessive exhalation or "blowing off" of carbon dioxide (CO_2). Since CO_2 dissolves in blood to form carbonic acid (H_2CO_3), its excessive loss leads to a decrease in the partial pressure of arterial CO_2 ($PaCO_2$) and a decrease in hydrogen ion concentration, causing the pH of the blood to rise. This condition, characterized by a primary decrease in $PaCO_2$ and an elevated pH, is defined as respiratory alkalosis.

Question 38. A woman with amenorrhea and galactorrhea is found to have a pituitary adenoma with elevated prolactin levels. What is the most likely mechanism responsible for her amenorrhea?

A. Low GnRH

B. High pulsed LH

C. High FSH

D. Inhibition of GnRH by prolactin

Correct answer: A

No explanation is available for this recall question yet.

Question 39. A patient presents with fatigue, muscle cramps, and an intense craving for salt. What is the most likely diagnosis?

A. Addison's disease

B. Conn's disease

C. Cushing's disease

D. Hypopituitarism

Correct answer: A

The combination of fatigue, muscle cramps, and a specific, strong craving for salt is highly suggestive of Addison's disease, or primary adrenal insufficiency. In this condition, the adrenal cortex fails to produce adequate amounts of cortisol and aldosterone. Aldosterone deficiency is the key to these specific symptoms. Lack of aldosterone leads to excessive sodium and water

loss in the urine (natriuresis) and retention of potassium (hyperkalemia). The resulting hyponatremia and volume depletion cause hypotension, fatigue, and muscle cramps. The body's physiological response to the severe sodium deficit manifests as an intense craving for salt. Conn's disease (Option B) is primary hyperaldosteronism, which would cause sodium retention and hypertension. Cushing's disease (Option C) involves excess cortisol and would also cause hypertension. Hypopituitarism (Option D) can cause secondary adrenal insufficiency, but the salt craving is most characteristic of primary (aldosterone-deficient) failure.

Question 40. Under the Protection of Children from Sexual Offences (POCSO) Act, , which age group or category of individuals is protected by this law?

A. All children under 16 years of age

B. All children under 18 years of age

C. Girls under 16 years of age

D. Girls under 18 years of age

Correct answer: B

The Protection of Children from Sexual Offences (POCSO) Act, 2012 is a comprehensive law in India designed to protect children from offenses of sexual assault, sexual harassment, and pornography. A central and defining feature of the Act is its definition of a "child." For the purposes of this law, a child is defined as any person below the age of 18 years. The law is gender-neutral, meaning it provides protection to all children, regardless of their gender. It establishes stringent punishments for sexual crimes against children and incorporates child-friendly procedures for reporting, investigation, and trial. The key takeaway is that the Act protects both boys and girls under the age of 18.

Question 41. A male patient with a recent history of a road traffic accident is brought to the hospital. His CT scan is normal, but he dies within three hours of admission. Autopsy reveals retraction ball appearance and petechial hemorrhages in the corpus callosum. What is the most likely diagnosis?

A. Diffuse vascular injury

B. Diffuse axonal injury

C. Intracerebral hemorrhage

D. None of the above

Correct answer: B

No explanation is available for this recall question yet.

Question 42. A -year-old woman presents with breathlessness and poor general health and is found to have widespread metastases. She is conscious and anxious. The medical team believes that aggressive treatments such as chemotherapy, radiotherapy, or ICU care would not be beneficial, but her daughter insists on

pursuing all possible interventions. How should the attending physician appropriately manage this situation?

A. Convene to family members and consider the patient's needs

B. Shift to ICU and start aggressive treatment

C. Discharge the patient and shift to palliative care

D. Give placebo care to relieve anxiety

Correct answer: A

This scenario presents a common and challenging ethical dilemma in end-of-life care, where there is a conflict between the medical team's assessment of futility and the family's desire for aggressive treatment. The most appropriate and ethical approach is to engage in open and compassionate communication. The doctor should convene a meeting with the family members (A), including the daughter, to discuss the patient's condition, the prognosis, and the goals of care. The focus should be on explaining

Question 43. During autopsy of a -year-old woman, bruises are found below the right angle of the jaw with scratch marks along the upper border, three grouped bruises on the left side of the neck below the thyroid cartilage, and additional bruises over the scapular region, back of the trunk, and hip crests. What is the most likely cause of death?

A. Throttling

B. Garroting

C. Mugging

D. Ligature Strangulation

Correct answer: A

The autopsy findings are highly characteristic of homicidal throttling, which is manual strangulation (compression of the neck by hands). The presence of bruises and scratches on the neck is the key indicator. The nail marks (scratches) are often caused by the victim trying to pull the assailant's hands away. The patterned bruising on both sides of the neck corresponds to the pressure applied by the assailant's fingers and thumb. The additional bruises on the back, shoulder, and hips are suggestive of a struggle and are common associated injuries in such a violent assault, where the victim may have been pinned down. Ligature strangulation (D) or garroting (B) would produce a distinct, narrow ligature mark around the neck, not finger and nail marks. Mugging (C) typically involves a chokehold from behind with the forearm, which produces a different pattern of injury.

Question 44. A -year-old girl and a -year-old man undergo medical examination after the girl’s parents allege rape. The girl states that the sexual activity was consensual, and no physical injuries are found. According to the law, which statement is correct in this situation?

A. Consent is invalid as the girl is under 18 years

B. No punishment since the act was consensual

C. Parents must prove that the act was non-consensual

D. No punishment since there are no injuries

Correct answer: A

This question addresses the legal concept of statutory rape. Under Indian law, specifically the Protection of Children from Sexual Offences (POCSO) Act, 2012, the age of consent for sexual activity is 18 years. Any sexual act involving a person below the age of 18 is considered a criminal offense, regardless of whether the minor agreed to it. The law presumes that a person under 18 is incapable of giving valid, informed consent to sexual activity. Therefore, the girl's statement that the act was consensual is legally irrelevant. The consent is invalid as a matter of law because she is a minor. The absence of physical injuries also does not negate the crime. The act itself constitutes a sexual offense under the POCSO Act.

Question 45. What is ZASKO's phenomena?

A. Tendon reflex occurring after death

B. Blood clotting after death

C. Gaping of wound along skin tension lines

D. Seeping of blood through bones after death

Correct answer: A

Zasko's phenomenon, also known as postmortem muscular irritability or idiomuscular contraction, is a finding that can be elicited in the early postmortem period. It refers to the localized contraction of a muscle in response to a direct mechanical stimulus,

Question 46. A patient with a history of hypertension presents with renal calculi and is started on hydrochlorothiazide. Which statement correctly explains the rationale for using this drug?

A. Increased calcium excretion

B. Decreased calcium excretion

C. Increased oxalate absorption

D. Decreased citrate excretion

Correct answer: B

The primary reason hydrochlorothiazide, a thiazide diuretic, is prescribed for patients with recurrent calcium-containing renal stones is its effect on renal calcium handling. Thiazides act on the distal convoluted tubule of the nephron, where they inhibit the Na^+-Cl^- cotransporter. This action leads to an indirect increase in the reabsorption of calcium from the tubular fluid back into the blood, resulting in decreased calcium excretion in the urine (hypocalciuria). By lowering the concentration of calcium in the urine, thiazides reduce the risk of calcium oxalate and calcium phosphate stone formation. Therefore, statement (B) is the correct explanation for

its therapeutic use in this context. Statement (A) is the opposite of the drug's effect. Statement (D), decreased citrate excretion (hypocitraturia), is a potential adverse effect of thiazides (often due to diuretic-induced hypokalemia), and it would actually increase the risk of stone formation, not prevent it. Citrate is a natural inhibitor of stone formation.

Question 47. A patient with HIV is newly diagnosed with multidrug-resistant tuberculosis. What is the appropriate treatment regimen, and which parameters should be monitored during therapy?

A. BPaLM; monitor for immune reconstitution syndrome

B. INH + Levofloxacin + Pyrazinamide + ethambutol, monitor for hepatotoxicity

C. INH + Levofloxacin + Streptomycin + Ethionamide, monitor for pyridoxine deficiency

D. INH + Clarithromycin + Pyrazinamide + Ethambutol, monitor for optic neuritis

Correct answer: A

For patients with multidrug-resistant tuberculosis (MDR-TB), which is defined as resistance to at least isoniazid and rifampicin, standard first-line drugs are ineffective. Current WHO guidelines recommend shorter, all-oral regimens. The BPaLM regimen is one such highly effective 6-month regimen consisting of Bedaquiline, Pretomanid, Linezolid, and Moxifloxacin. This regimen has shown high efficacy rates in treating MDR-TB. When treating a co-infected patient with HIV and TB, a critical consideration is the timing of antiretroviral therapy (ART) initiation. Starting ART can lead to a rapid recovery of the immune system, which can then mount an exaggerated inflammatory response to the TB antigens. This phenomenon is known as Immune Reconstitution Inflammatory Syndrome (IRIS), which can cause a paradoxical worsening of symptoms. Therefore, patients must be closely monitored for signs of IRIS. The other options list incorrect or outdated regimens for MDR-TB.

Question 48. What is the preferred drug used for chemoprophylaxis in close contacts of a patient with meningococcal meningitis?

A. Doxycycline

B. Amoxicillin

C. Ciprofloxacin

D. Vancomycin

Correct answer: C

The primary goal of chemoprophylaxis for close contacts of a patient with meningococcal meningitis is to eradicate nasopharyngeal carriage of Neisseria meningitidis and prevent secondary cases. The recommended drugs of choice for this purpose are rifampicin, ceftriaxone, and ciprofloxacin. Among the options provided, Ciprofloxacin is a highly effective and convenient choice, as it can be administered as a single oral dose. Rifampicin is also effective but requires a two-day course and has more contraindications and drug interactions. Ceftriaxone is effective as a single intramuscular injection but is less convenient than an oral

tablet. Amoxicillin (Option B) and Vancomycin (Option D) are not used for meningococcal prophylaxis as they do not reliably eradicate nasopharyngeal carriage. Doxycycline (Option A) is also not a first-line agent for this indication. Therefore, ciprofloxacin is the most appropriate and widely recommended option for chemoprophylaxis in this setting.

Question 49. Benralizumab exerts its therapeutic effect by targeting which specific receptor?

A. IL-5

B. IL-4

C. IL-1

D. TNF – α

Correct answer: A

Benralizumab is a monoclonal antibody specifically designed as a targeted therapy for severe eosinophilic asthma. Its mechanism of action involves binding to the alpha subunit of the interleukin-5 (IL-5) receptor, which is expressed on the surface of eosinophils and basophils. Unlike other anti-eosinophilic drugs that target the IL-5 ligand itself (like mepolizumab and reslizumab), benralizumab targets the receptor. By binding to the IL-5 receptor α, it prevents IL-5 from binding and activating the cell. More importantly, this binding marks the eosinophil for rapid destruction by natural killer cells through a process called antibody-dependent cell-mediated cytotoxicity (ADCC). This leads to a profound and rapid depletion of eosinophils from the blood and tissues. The other cytokines listed are involved in different inflammatory pathways : IL-4 (Option B) in atopy, IL-1 (Option C) in innate immunity, and TNF-α (Option D) in systemic inflammation.

Question 50. A patient presents with headache, palpitations, and diaphoresis, and has elevated 4-hour urinary metanephrine levels. Which medication should be administered preoperatively?

A. Phenoxybenzamine

B. Esmolol

C. CCB

D. Labetalol

Correct answer: D

The clinical triad of headache, palpitations, and diaphoresis, combined with elevated urine metanephrines, is classic for a pheochromocytoma, a catecholamine-secreting tumor. Preoperative management is crucial to control hypertension and prevent intraoperative hypertensive crises. The standard approach begins with alpha-adrenergic blockade to counteract the effects of high circulating norepinephrine and epinephrine. Phenoxybenzamine (Option A) is the classic, non-selective, irreversible alpha-blocker used for this purpose. However, Labetalol (Option D) is also an appropriate choice in some protocols. Labetalol is a

unique adrenergic antagonist that blocks both alpha-1 and beta receptors, with a beta-to-alpha blockade ratio of approximately 7

Question 51. A patient with tumor lysis syndrome develops hyperuricemia and is started on pegloticase. What is the mechanism of action of this drug?

A. Xanthine oxidase inhibition

B. URAT-1 receptor inhibition

C. Oxidizes uric acid

D. Hydrolysis of uric acid

Correct answer: C

Pegloticase is a recombinant form of the enzyme uricase (urate oxidase), which is covalently attached to polyethylene glycol (PEG) to prolong its half-life and reduce immunogenicity. The mechanism of action of pegloticase is fundamentally different from other drugs used for hyperuricemia. It directly metabolizes existing uric acid in the blood. Specifically, pegloticase oxidizes uric acid into a much more soluble and easily excretable compound called allantoin. This rapid reduction of serum uric acid levels makes it highly effective for treating severe, refractory gout and the hyperuricemia associated with tumor lysis syndrome. In contrast, xanthine oxidase inhibitors like allopurinol (Option A) work by preventing the formation of new uric acid from purines. Uricosuric agents that inhibit the URAT-1 transporter (Option B), such as probenecid, work by increasing the renal excretion of uric acid.

Question 52. Administration of large volumes of which of the following fluids can result in hyperchloremic metabolic acidosis?

A. Dextrose in NS (DNS)

B. Normal saline (NS)

C. 5% dextrose in water

D. Ringer lactate

Correct answer: B

Normal saline (0.9% NaCl) contains a supraphysiological concentration of chloride () compared to human plasma (around). When large volumes of normal saline are administered intravenously, the excess chloride load leads to a decrease in the plasma bicarbonate concentration to maintain electrical neutrality. This results in a non-anion gap metabolic acidosis, specifically termed hyperchloremic metabolic acidosis. Ringer's lactate (Option D) is a balanced salt solution containing lactate, which is metabolized in the liver to bicarbonate, thereby having an alkalinizing effect and preventing acidosis. 5% dextrose in water (Option C) provides free water after the dextrose is metabolized and does not contribute to acidosis. Dextrose in NS (DNS) (Option A) also contains normal saline and can cause the same issue, but normal saline alone (Option B) is the classic cause.

Question 53. A 0-year-old man presents with gastroesophageal reflux disease (GERD). Which medication promotes lower esophageal sphincter contraction and enhances gastric emptying?

A. Metoclopramide

B. Pantoprazole

C. Vonoprazan

D. Sodium alginate

Correct answer: A

Metoclopramide is a prokinetic agent whose primary mechanism of action is to enhance the coordinated motility of the upper gastrointestinal tract. It acts as a dopamine D2 receptor antagonist and also has 5-HT4 receptor agonist properties. These actions result in several effects beneficial for gastroesophageal reflux disease (GERD) : it increases the resting tone of the lower esophageal sphincter (LES),

Question 54. A farmer presents with a necrotic, ulcerative skin lesion. Microscopic examination using polychrome methylene blue stain shows capsulated bacilli with a positive McFadyean reaction. Which organism is the most likely cause?

A. Clostridium perfringens

B. Bacillus anthracis

C. Yersinia pestis

D. Francisella tularensis

Correct answer: B

This is a classic description of cutaneous anthrax. The causative agent is Bacillus anthracis, a large, Gram-positive, spore-forming rod. The infection is typically acquired through contact with infected animals or their products (e.g., wool, hides), making farmers a high-risk group. The cutaneous form begins as a papule that progresses to a vesicle and then a characteristic painless, black, necrotic eschar with surrounding edema. A key diagnostic feature is the microscopic appearance of the organism from a clinical specimen. Using a polychrome methylene blue stain (like M'Fadyean's stain), Bacillus anthracis appears as large, blue-black bacilli surrounded by a distinct purplish-pink capsule. This characteristic capsular staining is known as the M'Fadyean reaction and is pathognomonic for B. anthracis.

Question 55. Which structural component of Group A Streptococcus facilitates its adherence to the pharyngeal epithelium by binding to fibronectin?

A. Lipoprotein

B. Lipoteichoic acid

C. Capsule

D. Flagella

Correct answer: B

The first step in the pathogenesis of streptococcal pharyngitis is the adhesion of Streptococcus pyogenes (Group A Streptococcus) to the epithelial cells of the pharynx. This attachment is a complex process involving several bacterial surface adhesins. One of the most important of these adhesins is lipoteichoic acid (LTA). LTA is a major component of the cell wall of Gram-positive bacteria. The lipid portion of LTA anchors it to the bacterial cell membrane, while the long teichoic acid polymer extends through the cell wall. This exposed LTA, in complex with other surface proteins like the M protein, mediates the initial, loose attachment of the streptococci to host cells by binding to fibronectin on the surface of the pharyngeal epithelium. This binding is a critical step that allows the bacteria to colonize the throat and initiate infection.

Question 56. Several villagers develop watery diarrhea that later becomes bloody after consuming unpasteurized milk. Stool microscopy shows Gram-negative curved bacilli along with polymorphonuclear leukocytes. What is the most likely causative organism?

A. Clostridium perfringens

B. Staphylococcus aureus

C. Vibrio parahaemolyticus

D. Campylobacter jejuni

Correct answer: D

The clinical history of an outbreak of inflammatory diarrhea (watery followed by bloody, with PMNs in the stool) associated with the consumption of unpasteurized milk is highly suggestive of an infection with Campylobacter jejuni. This is a leading cause of bacterial gastroenteritis worldwide. The key microscopic

Question 57. Which antipsychotic drug is associated with elevated prolactin levels?

A. Olanzapine

B. Ziprasidone

C. Clozapine

D. Risperidone MEDINK CHAPTER 07_MICROBIOLOGY

Correct answer: C

AspergillosisThe microscopic finding described is the pathognomonic feature of Aspergillus species. On direct microscopic examination of a clinical specimen, such as a bronchoalveolar lavage (BAL) fluid or a tissue biopsy, Aspergillus is identified by its characteristic morphology : septate hyphae of uniform diameter that exhibit dichotomous branching at a regular, acute angle (approximately 45 degrees). This appearance is distinct from that of other molds. The fungi that cause mucormycosis (A), such as Rhizopus or Mucor, have broad, non-septate or pauciseptate hyphae that branch at right or obtuse angles. Histoplasmosis (B) and other dimorphic fungi grow as yeasts in tissue. Candidiasis (D) typically presents as budding yeasts

and pseudohyphae. The clinical presentation with pulmonary symptoms like hemoptysis is also classic for invasive pulmonary aspergillosis in an immuno compromised host.

Question 58. A patient with a brain abscess shows Gram-positive, branching, filamentous organisms on microscopy. The organism is weakly acid-fast and grows on paraffin bait medium. Which is the most likely causative agent?

A. Actinomyces israelii

B. Mycobacterium tuberculosis

C. Nocardia asteroides

D. Cryptococcus neoformans

Correct answer: C

This combination of microbiological features is diagnostic for Nocardia asteroides. Nocardia species are Gram-positive, branching, filamentous bacteria that can cause opportunistic infections, including pulmonary disease and brain abscesses, particularly in immuno compromised hosts. A key distinguishing feature is that they are weakly acid-fast when stained with a modified acid-fast stain (like the Kinyoun or Fite-Faraco stain). Furthermore, Nocardia has the unique metabolic ability to use paraffin as a sole source of carbon, meaning it will grow on a paraffin bait medium, a test used to differentiate it from Actinomyces. Actinomyces israelii (A) is also a Gram-positive branching filament but is anaerobic and is not acid-fast. Mycobacterium

Question 59. A patient with recurrent Neisseria gonorrhoeae infections is being investigated. Which Click Here to Buy book on Amazon immunological test would best identify a defect in the complement pathway?

A. C1 esterase inhibitor assay

B. Quantitative immunoglobulin levels

C. Nitroblue tetrazolium test

D. Terminal complement (C5-C9) assay

Correct answer: D

The complement system is a critical part of the innate immune defense against bacterial infections. The final step of the complement cascade is the formation of the Membrane Attack Complex (MAC), which is composed of the terminal complement components C5b through C9. The MAC creates pores in the outer membrane of bacteria, particularly Gram-negative bacteria, leading to their lysis. Individuals with an inherited deficiency in one of the terminal complement components (C5, C6, C7, C8, or C9) are unable to form a functional MAC. This makes them profoundly susceptible to recurrent and disseminated infections with Neisseria species, including Neisseria meningitidis and Neisseria gonorrhoeae. Therefore, the best screening test to detect this specific immunodeficiency is a functional assay that measures the total activity of the terminal complement pathway, such as a CH50 assay, followed by specific assays for the individual C5-C9 components.

Question 60. A 25-year-old sewage worker presents with one week of fever followed by sudden-onset weakness. He has scleral congestion, jaundice, and oliguria, with laboratory evidence of elevated bilirubin levels. What is the most likely diagnosis?

A. Brucellosis

B. Weil's disease

C. Enteric fever

D. DHF

Correct answer: B

The patient's occupation as a sewage worker puts him at high risk for leptospirosis, an infection caused by the spirochete Leptospira interrogans. The clinical presentation is classic for the severe, icteric form of leptospirosis, which is known as Weil's disease. This syndrome is characterized by

Question 61. A patient presents with guttate lesions in one eye and bullous keratopathy in the other. What is the most likely diagnosis?

A. Fuchs' endothelial dystrophy

B. Viral corneal ulcer

C. Interstitial keratitis

D. Keratoconjunctivitis

Correct answer: A

This is a classic description of the clinical spectrum of Fuchs' endothelial dystrophy. This is a common, bilateral, slowly progressive genetic disorder of the corneal endothelium. The hallmark of the early stage of the disease is the presence of corneal guttae, which are excrescences on Descemet's membrane that appear as drop-like or beaten-metal changes on slit-lamp examination. As the disease progresses, the endothelial cells, which are responsible for keeping the cornea dehydrated and clear, begin to fail and die off. This endothelial decompensation leads to an influx of aqueous humor into the corneal stroma, causing corneal edema. In advanced stages, this edema becomes severe and can cause the formation of epithelial blisters, a painful condition known as bullous keratopathy, leading to significant vision loss. The presence of guttae in one eye and the advanced stage of bullous keratopathy in the other is typical for this progressive disease.

Question 62. Which of the following statements is correct regarding orbital cellulitis?

A. The inflammation is confined anterior to the orbital septum

B. Ethmoidal sinusitis is the most common cause in all age groups

C. It presents with proptosis, but pupillary reflexes and extraocular movements remain normal

D. Broad-spectrum topical antibiotics are the treatment of choice

Correct answer: B

Orbital cellulitis is a serious infection of the soft tissues of the orbit posterior to the orbital

septum (A is the definition of preseptal cellulitis). The most common cause, especially in children, is the contiguous spread of infection from the adjacent paranasal sinuses. The thin lamina papyracea of the medial orbital wall separates the orbit from the ethmoid sinuses, making

Question 63. A 65-year-old patient with a history of atrial flutter is planned for long-term prophylaxis to prevent recurrence. For rate control and prevention of rapid ventricular response, which calcium channel blocker is the most appropriate choice?

A. Amlodipine

B. Nifedipine

C. Diltiazem

D. Felodipine

Correct answer: C

For rate control in atrial fibrillation and atrial flutter, the goal is to slow conduction through the atrioventricular (AV) node. The calcium channel blockers that have this effect are the non-dihydropyridine agents. This class includes diltiazem and verapamil. They act on the L-type calcium channels in the AV nodal tissue, slowing the conduction of atrial impulses to the ventricles and thereby controlling the ventricular rate. In contrast, the dihydropyridine calcium channel blockers, such as amlodipine (A), nifedipine (B), and felodipine (D), are potent peripheral vasodilators and have minimal to no effect on the AV node. In fact, by causing vasodilation and a reflex tachycardia, they can sometimes worsen the ventricular rate in atrial flutter or fibrillation. Therefore, for rate control, a non-dihydropyridine agent like diltiazem is the appropriate choice.

Question 64. A diabetic patient currently treated with insulin glargine and metformin continues to have poor glycemic control (HbA1c 8.3%) and shows features of heart failure. Which medication would be the most appropriate addition to the treatment regimen?

A. Sitagliptin

B. Pioglitazone

C. Empagliflozin

D. Gliclazide

Correct answer: C

The patient has inadequately controlled type 2 diabetes and concurrent heart failure. The choice of a third agent must consider both glycemic control and cardiovascular effects. The Sodium-Glucose Cotransporter 2 (SGLT2) inhibitors, such as empagliflozin, have emerged as a preferred class in this scenario. Landmark clinical trials (like the EMPA-REG OUTCOME trial) have shown that empagliflozin not only improves glycemic control but also provides significant

cardiovascular benefits, including a marked reduction in hospitalizations for heart failure and a decrease in cardiovascular mortality. In contrast, pioglitazone (B), a thiazolidinedione, is contraindicated in patients with heart failure as it can cause fluid retention and worsen the condition. A sulfonylurea like gliclazide (D) or a DPP-4 inhibitor like sitagliptin (A) would help with glucose control but do not offer the specific proven benefit in heart failure that an SGLT2 inhibitor does.

Question 65. A patient with atrial fibrillation and mitral stenosis presents within 4 hours of symptom onset and is hemodynamically stable. What is the most appropriate next step in management?

A. Ventricular rate control

B. Cardioversion

C. Anticoagulation

D. Wait and watch

Correct answer: B

The patient has new-onset atrial fibrillation in the setting of mitral stenosis (valvular AF). In patients with AF of recent onset (less than 48

Question 66. A 2-year-old child is brought to the emergency department after a generalized tonic–clonic seizure lasting 3 minutes, associated with a high fever of 39.5°C. There is no prior history of seizures or neurological illness. The seizure has resolved, but the parents are worried about recurrence. What is the most appropriate immediate management in this case of febrile seizure?

A. Ethosuximide

B. Sodium valproate

C. Diazepam

D. No antiepileptic medication needed

Correct answer: C

This is a classic presentation of a simple febrile seizure. While the seizure has already stopped (post-ictal state), the question asks for the appropriate immediate management for the seizure. If a febrile seizure is ongoing or if the child has a cluster of seizures, the immediate goal is to terminate the seizure activity. The first-line abortive treatment for a prolonged febrile seizure is a benzodiazepine, such as rectal or intravenous diazepam, or intranasal midazolam. These drugs rapidly terminate the seizure. For a simple febrile seizure that has already self-terminated, as in this case, no immediate antiepileptic is needed (D would be the correct action in the post-ictal phase). However, of the medications listed, diazepam is the only one used for acute management.

Question 67. A 45-year-old woman presents with a 6-month history of paroxysmal

nocturnal dyspnea, palpitations, and breathlessness. Her blood pressure and oxygen saturation are normal, but she has elevated jugular venous pressure and an irregularly irregular pulse. Examination shows tender hepatomegaly, a heaving apex beat, and a mid-diastolic murmur at the apex. She has a past history of acute rheumatic fever. Which of the following statements is false?

A. This patient has an increased risk of stroke

B. The 'a' wave is absent in the JVP

C. This patient shows features of right heart failure

D. Presystolic accentuation is a hallmark feature

Correct answer: D

The patient's history and findings are classic for severe mitral stenosis complicated by atrial fibrillation (AF). The history of rheumatic fever, the mid-diastolic murmur at the apex, and the signs of both left-sided (PND, breathlessness) and right-sided heart failure (elevated JVP, hepatomegaly) all point to this diagnosis. The irregularly irregular pulse confirms AF.(A) True : Mitral stenosis with AF carries a very high risk of thromboembolism and stroke.(B) True : In atrial fibrillation, the organized atrial contraction is lost. The 'a' wave in the JVP is caused by atrial contraction, so it is absent in AF.(C) True : The elevated JVP and tender hepatomegaly are clear features of right heart failure.(D) False : Presystolic accentuation of the mitral stenosis murmur is caused by the increased blood flow across the stenotic valve during atrial contraction just before systole. Since this patient is in atrial fibrillation and has no effective atrial contraction, this feature of the murmur would be absent.

Question 68. A 65-year-old man presents with an increased hat size, shin pain, elevated alkaline phosphatase levels, and normal calcium and parathyroid hormone levels. Imaging shows mixed lytic and sclerotic bone lesions on X-ray. What is the most likely diagnosis?

A. Paget's disease

B. Primary hyperparathyroidism

C. Osteomalacia

D. Bone metastasis

Correct answer: A

This is a classic presentation of Paget's disease of bone (osteitis deformans). This is a chronic bone disorder characterized by focal areas of excessive and disorganized bone remodeling. The classic symptoms include an enlarged hat size due to the expansion of the skull, bone pain (e.g., in the shin from a bowed tibia), and warmth over the affected bone. The hallmark laboratory finding is a markedly elevated serum alkaline phosphatase (ALP), which reflects the high rate of bone turnover, while serum calcium and parathyroid hormone (PTH) levels are typically normal. Radiographs show the characteristic findings of thickened cortices, bone

expansion, and a disorganized pattern of mixed lytic and sclerotic lesions. Primary hyperparathyroidism (B) would cause high calcium and PTH. Osteomalacia (C) would have low or normal calcium and high PTH.

Question 69. A 64-year-old man with chronic kidney disease presents with pallor, exertional dyspnea, and features of heart failure. Laboratory evaluation shows normocytic anemia. What is the most appropriate next step in management?

A. Oral iron

B. Darbepoetin alfa

C. Intravenous iron

D. Blood transfusion

Correct answer: A

No explanation is available for this recall question yet.

Question 70. A 42-year-old woman presents with enlarged hands, coarse facial features, and an increase in shoe size, with elevated IGF-1 levels. Which test is the most specific for confirming this diagnosis?

A. Measurement of IGF-1 alone

B. Lack of GH suppression following oral glucose tolerance test (OGTT)

C. Lack of IGF-1 suppression after OGTT

D. Random growth hormone level

Correct answer: B

The patient's symptoms are classic for acromegaly, a disorder caused by excessive secretion of Growth Hormone (GH), usually from a pituitary adenoma. The initial screening test for acromegaly is the measurement of Insulin-like Growth Factor 1 (IGF-1) levels. An elevated IGF-1 (A) is highly suggestive of the diagnosis. However, the most specific and definitive confirmatory test is the oral glucose tolerance test (OGTT) for GH suppression. In a normal individual, a glucose load will suppress the secretion of GH from the pituitary. In a patient with acromegaly, the pituitary adenoma

Question 71. A 54-year-old man with long-standing hyponatremia develops sudden quadriparesis following rapid correction of serum sodium. Which investigation would be most appropriate to confirm the suspected diagnosis?

A. Brainstem evoked potential

B. Electroencephalogram (EEG)

C. MRI of the brain

D. Nerve conduction studies

Correct answer: C

The clinical scenario of a patient with chronic hyponatremia who develops acute neurological

deficits like quadriparesis, dysphagia, and dysarthria a few days after the rapid correction of their serum sodium is the classic presentation of Osmotic Demyelination Syndrome (ODS). This condition, also known as Central Pontine Myelinolysis, is caused by osmotic stress on oligodendrocytes from the rapid fluid shifts, leading to demyelination. The most characteristic site of injury is the central pons. The investigation of choice to confirm the diagnosis is an MRI of the brain. T2-weighted and FLAIR sequences will demonstrate a characteristic, often trident-shaped, area of hyperintensity (high signal) in the central pons, representing the demyelination, which typically spares the peripheral and tegmental portions of the pons. This imaging finding is pathognomonic for ODS.

Question 72. In Addison's disease, elevation of which hormone is responsible for the development of hyperpigmentation?

A. Cortisol

B. ACTH

C. Aldosterone

D. Renin

Correct answer: B

No explanation is available for this recall question yet.

Question 73. A 50-year-old man presents with altered mental status and deep, labored breathing. Arterial blood gas analysis shows pH 7.20, pCO_2 35 mmHg, HCO_3^- 16 mEq/L, PaO_2 80 mmHg, sodium 130 mEq/L, and chloride 84 mEq/L. What is the most likely acid–base disorder?

A. Acute metabolic acidosis with AG 30

B. Chronic metabolic acidosis with AG 30

C. Acute respiratory acidosis

D. Chronic respiratory acidosis

Correct answer: A

This is a classic acid-base interpretation problem.1. Look at the pH : The pH is 7.20, which is low (normal is 7.35-7.45). This indicates an acidosis.2. Determine the primary disturbance : The bicarbonate (HCO3) is low at 16 mEq/L (normal is 22-26). A low bicarbonate causes a metabolic acidosis. The pCO2 is 35 mmHg (normal is 35-45), which is in the low-normal range, indicating some respiratory compensation is occurring. Since the primary problem is metabolic, it is a metabolic acidosis.

Question 74. A patient suddenly collapses with breathlessness and pink, frothy sputum. Autopsy reveals hemosiderin-laden macrophages. In which of the following conditions would this finding not be seen?

A. Protein-losing enteropathy

B. Right heart failure

C. Volume overload

D. Pulmonary vein obstruction

Correct answer: B

The patient's presentation with acute breathlessness and pink, frothy sputum is classic for acute pulmonary edema. The finding of hemosiderin-laden macrophages (also known as "heart failure cells") in the alveoli at autopsy is a sign of chronic pulmonary congestion and hemorrhage. This occurs in conditions that cause a sustained elevation of pressure in the pulmonary capillaries. This leads to the leakage of red blood cells into the alveolar spaces, where they are phagocytosed by macrophages, and the hemoglobin is broken down into hemosiderin. This is a hallmark of left-sided heart failure or conditions that increase left atrial pressure, such as mitral stenosis or pulmonary vein obstruction (D), as well as general volume overload (C). In contrast, isolated right heart failure (B) causes congestion in the systemic venous circulation (leading to peripheral edema, ascites, etc.), not the pulmonary circulation. Protein-losing enteropathy (A) is unrelated to this finding.

Question 75. A 14-year-old boy presents with fatigue, mild jaundice, and splenomegaly. Laboratory evaluation shows hemoglobin of 10.5 g/dL, MCV of 82 fL, and an elevated MCHC of 37 g/dL. His father has a history of chronic anemia and has undergone splenectomy. What is the most likely diagnosis?

A. Autoimmune hemolytic anemia

B. Hereditary spherocytosis

C. Thalassemia minor

D. G6PD deficiency

Correct answer: B

This is a classic presentation of hereditary spherocytosis (HS). The key diagnostic clues are the clinical triad of anemia, jaundice, and splenomegaly. The laboratory finding of a high Mean Corpuscular Hemoglobin Concentration (MCHC) is highly characteristic, and almost pathognomonic, for HS. In HS, a genetic defect in red blood cell membrane structural proteins (like spectrin or ankyrin) causes the cell to lose its biconcave shape and become a sphere. This spherical shape has the smallest surface area for a given volume, which results in an elevated MCHC. These rigid spherocytes are then trapped and destroyed prematurely in the spleen, leading to a chronic extravascular hemolytic anemia. The family history of a similar anemia and the beneficial effect of splenectomy in the father are also highly suggestive of this autosomal dominant disorder.

Question 76. A patient presents with hypotension, fever, joint pain, petechial rash over the limbs, and respiratory distress. What is the most likely diagnosis?

A. Disseminated gonococcal infection

B. Septic shock

C. Rheumatoid arthritis

D. Septic arthritis

Correct answer: B

The patient presents with a constellation of findings indicating a severe, systemic inflammatory response with multi-organ dysfunction. The presence of fever and hypotension in a patient with a presumed infection is the definition of septic shock. The other signs—joint pain (arthralgia), a petechial rash, and respiratory distress (a sign of ARDS)—are all common manifestations of severe sepsis and septic shock, representing end-organ damage from the systemic inflammation and hypo perfusion. While disseminated gonococcal infection (A) can present with a triad of dermatitis, tenosynovitis, and polyarthralgia,

Question 77. A 15-year-old adolescent with known type 1 diabetes mellitus presents with fatigue, vomiting, and diarrhea. Investigations show a random blood glucose of 700 mg/dL, serum sodium of 125 mEq/L, and potassium of 4.2 mEq/L. Which of the following measures is not recommended during the initial management of this patient?

A. Administration of 3% saline

B. Initiation of 0.9% normal saline infusion

C. Intravenous insulin therapy

D. Frequent monitoring of serum potassium levels

Correct answer: A

The patient is in Diabetic Ketoacidosis (DKA), a life-threatening complication of type 1 diabetes. The initial management focuses on three key areas : fluid resuscitation, insulin therapy, and electrolyte correction.(B) Fluid resuscitation with 0.9% normal saline is the first and most critical step to correct the severe dehydration and hypovolemia.(C) Intravenous regular insulin therapy is started after initial fluid resuscitation to correct the hyperglycemia and shut off ketone production.(D) Frequent monitoring of serum potassium is essential, as insulin therapy and correction of acidosis will drive potassium into the cells, leading to a rapid fall in serum potassium levels.The measured serum sodium of 125 mEq/L is an example of pseudohyponatremia. The extreme hyperglycemia pulls water out of cells, diluting the serum sodium. The corrected sodium is actually normal or even high. Therefore, administering hypertonic saline (3% saline) (A) is not recommended and would be dangerous, as it would worsen the hyperosmolar state.

Question 78. A patient presents with palpitations and an irregularly irregular pulse, arriving 2.5 hours after symptom onset. He has no history of diabetes, and his blood pressure is 160/100 mmHg. What is the most appropriate next step in management?

A. Control ventricular rate with verapamil

B. Emergent cardioversion

C. Transesophageal echo (TEE)

D. Wait and watch

Correct answer: A

The patient presents with new-onset atrial fibrillation with a rapid ventricular response. He is hemodynamically stable, although his blood pressure is elevated. The onset of symptoms was very recent (2.5 hours ago). In a stable patient with new-onset AF, the primary immediate goal is rate control. This involves administering a medication to slow conduction through the AV node, which will reduce the ventricular rate, improve diastolic filling time, and alleviate symptoms. First-line agents for rate control are beta-blockers or non-dihydropyridine calcium channel blockers. Verapamil is a non-dihydropyridine calcium channel blocker and is an appropriate choice to control the ventricular rate. Emergent cardioversion (B) is reserved for hemodynamically unstable patients. A TEE (C) would be needed before cardioversion if the duration of AF was >48 hours or unknown, but here the onset is acute.

Question 79. 36-year-old woman presents with symmetrical involvement of small joints and is positive for anti-CCP antibodies. Which histopathological finding is most characteristic of this condition?

A. Synovial granulomas

B. Pannus formation and reactive lymphocytic infiltrate

C. Uric acid crystal deposits

D. Non-caseating granulomas

Correct answer: B

The clinical picture of symmetrical small joint arthritis (affecting the hands and feet) and a positive anti-Cyclic Citrullinated Peptide (anti-CCP) antibody is highly specific for a diagnosis of Rheumatoid Arthritis (RA). The underlying pathology of RA is a chronic autoimmune synovitis. The characteristic histological feature is synovial hyperplasia with a dense, chronic inflammatory infiltrate composed of lymphocytes, plasma cells, and macrophages. This inflamed, hypertrophied synovial tissue is known as a pannus. The pannus is an aggressive, invasive tissue that grows over the surface of

Question 80. A patient with asthma who is already using salbutamol and ipratropium continues to experience nocturnal exacerbations. What should be the next step in management?

A. Oral corticosteroids

B. Montelukast

C. LABA plus inhalation steroids

D. Increase the dose of salbutamol

Correct answer: C

The patient is using short-acting rescue inhalers (salbutamol, a SABA, and ipratropium, a SAMA) but is still experiencing nocturnal symptoms, which indicates poorly controlled, persistent asthma. The presence of nighttime awakenings places the patient at least in the moderate persistent asthma category. According to stepwise asthma management guidelines (like GINA), the next step in treatment when a patient is not controlled on as-needed SABA alone is to add a controller medication. The preferred controller therapy is a low-dose inhaled corticosteroid (ICS). For patients with persistent symptoms, the addition of a Long-Acting Beta-Agonist (LABA) to the ICS is recommended. The combination of a LABA plus an inhaled steroid is a cornerstone of maintenance therapy for persistent asthma. It provides both anti-inflammatory effects (from the ICS) and long-acting bronchodilation (from the LABA) to control symptoms and prevent exacerbations, including nocturnal awakenings.

Question 81. A 32-year-old man with a history of recurrent paroxysmal supraventricular tachycardia is currently stable in sinus rhythm. Which option is most appropriate for long-term prophylactic management?

A. IV adenosine

B. IV Esmolol

C. Oral diltiazem

D. IV amiodarone

Correct answer: C

The question asks for a medication for long-term prophylaxis (prevention) of recurrent Paroxysmal Supraventricular Tachycardia (PSVT) in a stable patient. IV adenosine (A) is the first-line drug for the acute termination of an episode of PSVT, but its ultra-short half-life makes it useless for prophylaxis. IV esmolol (B) and IV amiodarone (D) can also be used for acute management but are not used for long-term oral prophylaxis in this context. For long-term prevention of recurrent PSVT, the first-line options are medications that slow conduction through the AV node. These include oral beta-blockers or non-dihydropyridine calcium channel blockers. Oral diltiazem is a non-dihydropyridine calcium channel blocker and is an excellent and commonly used choice for this purpose. It is taken daily to prevent the re-entrant circuit of the SVT from being initiated.

Question 82. critically ill patient with COVID-19 is admitted to the ICU and requires mechanical ventilation. The PaO_2/FiO_2 ratio is 100, consistent with severe ARDS. Which ventilatory strategy is most appropriate for managing this patient?

A. High PEEP and low tidal volume

B. High PEEP and high tidal volume

C. Low PEEP and low tidal volume

D. Low PEEP and high tidal volume

Correct answer: A

The patient has severe Acute Respiratory Distress Syndrome (ARDS), as defined by a PaO2/FiO2 ratio of ≤100. The cornerstone of mechanical ventilation for ARDS is a lung-protective strategy. This strategy has two main components designed to minimize ventilator-induced lung injury (VILI) :1. Low Tidal Volume (LTV) : Tidal volumes are kept low, typically 6 mL/kg of predicted body weight, to prevent overdistension of the alveoli (volutrauma).2. High Positive End-Expiratory Pressure (PEEP) : In ARDS, the lungs are prone to alveolar collapse (atelectasis). Applying a higher level of PEEP helps to recruit collapsed alveoli, keep them open throughout the respiratory cycle, improve oxygenation by reducing intrapulmonary shunting, and allow for a lower, less toxic FiO2 to be used.Therefore, the combination of high PEEP and low tidal volume is the standard, evidence-based ventilatory strategy for managing severe ARDS.

Question 83. A 58-year-old patient has a prolonged prothrombin time, and factor IX (a vitamin K–dependent factor) deficiency is suspected. Parenteral vitamin K is planned. In which condition would this treatment be effective?

A. Hepatitis A

B. Pernicious anemia

C. Hemophilia B

D. Bile duct obstruction

Correct answer: D

This question is confusingly worded. A prolonged Prothrombin Time (PT) indicates a deficiency of the vitamin K-dependent clotting factors (II, VII, IX, X). The question states the patient has a Factor IX deficiency, but then asks when giving Vitamin K would help. Hemophilia B (C) is a congenital deficiency of Factor IX and will not respond to Vitamin K. The most likely scenario the question is trying to describe is a Vitamin K deficiency leading to a functional deficiency of all vitamin K-dependent factors. Vitamin K is a fat-soluble vitamin, and its absorption from the gut requires the presence of bile salts. In a patient with an obstructive jaundice, such as from a bile duct obstruction, bile cannot reach the intestine, leading to malabsorption of fat-soluble vitamins, including Vitamin K. This results in a deficiency and a prolonged PT. In this specific situation, administering parenteral vitamin K will bypass the gut malabsorption, replete the vitamin K stores, and allow the liver to synthesize the clotting factors, thereby correcting the coagulopathy.

Question 84. A patient presents with sudden-onset aphasia and right arm weakness for the past 5 hours. Which investigation is indicated at this stage?

A. MRI brain

B. Carotid Doppler

C. TEE

D. Tranthoracic echocardiography

Correct answer: C

The patient has had an acute ischemic stroke affecting the left middle cerebral artery territory. At 5 hours, he is outside the window for intravenous thrombolysis. The next step is to perform a comprehensive workup to determine the etiology of the stroke to guide secondary prevention. Common causes include large artery atherosclerosis, small vessel disease, and cardioembolism. In a younger patient without significant atherosclerotic risk factors, a cardioembolic source should be strongly suspected. A Transesophageal Echocardiogram (TEE) is significantly more sensitive than a transthoracic echo (D) for identifying potential cardiac sources of emboli, such as a patent

Question 85. A newly diagnosed HIV-positive patient with a CD4 count of 250 cells/ mm^3 is found to have active tuberculosis and has not yet begun antiretroviral therapy. What is the appropriate strategy for initiating treatment in this patient?

A. Start ATT first, then initiate ART after 2 weeks

B. Start ART first, then begin ATT after 2 weeks

C. Start both ART and ATT simultaneously

D. Start ATT first, then initiate ART after 8 weeks

Correct answer: A

In patients with newly diagnosed HIV and active tuberculosis (TB) co-infection, it is critical to start treatment for both conditions promptly. However, the timing is crucial to balance the need for immune recovery with the risk of Immune Reconstitution Inflammatory Syndrome (IRIS). The universal recommendation from the WHO and other major guidelines is to start anti-tubercular therapy (ATT) first. This is the immediate priority to control the active TB infection. Antiretroviral therapy (ART) should then be initiated as soon as possible after starting ATT. For patients with a CD4 count greater than 50 cells/mm^3, ART should be started within the first 2 to 8 weeks of ATT. For patients with

Question 86. A 20-year-old man from Andhra Pradesh presents with bowing of the lower limbs and features of osteoporosis. His diet primarily includes rice and jowar roti. Which of the following interventions would not be beneficial in managing his condition?

A. Provision of running surface water for drinking

B. Change the water source

C. Fluoride supplementation

D. Add lime and alum to drinking water

Correct answer: C

The patient's clinical presentation of skeletal deformities (genu valgum or "knock-knees") and signs of osteoporosis, in the context of residing in Andhra Pradesh (a known endemic area) and a diet rich in sorghum (jowar), is highly suggestive of endemic skeletal fluorosis. This condition is caused by the chronic ingestion of excessive amounts of fluoride, typically from

contaminated groundwater. The high fluoride intake disrupts normal bone metabolism, leading to a crippling bone disease. Therefore, the key to management and prevention is to reduce fluoride intake. Changing the water source (B) to one with safe fluoride levels or providing safe running surface water (A) is the most important intervention. The Nalgonda technique, which involves adding lime and alum (D) to the water, is a simple method used at the household or community level to precipitate and remove excess fluoride. Fluoride supplementation (C) would be completely contraindicated and harmful, as it would further increase the already toxic fluoride burden.

Question 87. A student is instructed to collect the appropriate reagent boxes from the laboratory for performing the Nalgonda technique.

A. Alum and Gypsum

B. Alum and Charcoal

C. Alum and Lime

D. Charcoal and Lime

Correct answer: C

The Nalgonda technique is a simple, cost-effective water treatment method developed in India specifically for the de fluoridation of drinking water at the community or household level. The process involves the sequential addition of two common chemicals to the fluoride-contaminated water. The first is lime (calcium hydroxide), which is added to provide the necessary alkalinity for the reaction. The second and key chemical is alum (aluminum sulfate). The alum flocculates in the alkaline water, and the fluoride ions are removed from the water through adsorption onto the aluminum hydroxide flocs. The mixture is stirred and then allowed to settle, after which the clear, defluoridated water is decanted for use. Therefore, the two essential chemical components required for the Nalgonda technique are alum and lime.

Question 88. Study aims to compare the average hemoglobin (Hb) levels between two groups. Which statistical test would be most appropriate for this comparison?

A. Paired t-test

B. Unpaired t-test

C. Chi-square test

D. ANOVA

Correct answer: B

The choice of statistical test depends on the type of data and the study design. The question asks to compare the mean of a continuous variable (hemoglobin levels) between two independent groups. The most appropriate statistical test for this specific scenario is the independent samples t-test, also known as the unpaired t-test. This test determines whether there is a statistically significant difference between the means of the two groups. A paired t-test (A) would be used if

Question 89. For the prevention of coronary artery disease, what is the recommended maximum daily intake of dietary cholesterol?

A. 100 mg/1000 kcal

B. 200 mg/1000 kcal

C. 400 mg/1000 kcal

D. 500 mg/1000 kcal

Correct answer: A

Major dietary guidelines for the prevention of cardiovascular disease, such as those from the American Heart Association (AHA), have evolved over time. While older guidelines recommended a strict limit of <300 mg/day of dietary cholesterol, more recent guidelines have shifted focus towards overall dietary patterns rather than a specific cholesterol limit, as the link between dietary cholesterol and serum cholesterol is less direct than previously thought. However, guidelines that do provide a specific limit often recommend keeping cholesterol intake as low as possible. For individuals at high risk or with established cardiovascular disease, a stricter recommendation is often given, typically aiming for less than 200 mg per day. For a standard 2000 kcal diet, this translates to 100 mg/1000 kcal, making it the most appropriate and heart-healthy recommendation among the choices.

Question 90. After an industrial explosion releases toxic fumes into the environment, what advice should be given to the nearby residents?

A. Use telephone and call friends

B. Seal the cracks and close the windows

C. Open the window for ventilation

D. Use the mask

Correct answer: B

No explanation is available for this recall question yet.

Question 91. To reduce prenatal sepsis, a new community-level intervention is implemented. Researchers assign 20 primary health centers to standard care and 20 to a community-based intervention. Which type of study design does this represent?

A. Cross-sectional study

B. Case-control study

C. Quasi-experimental study

D. Cluster-randomized control trial

Correct answer: D

This study design has two key features that define it. First, the intervention is being tested in a controlled, experimental fashion, where one group receives the intervention and a control group receives standard care. Second, the unit of randomization is not the individual patient, but a pre-existing group or "cluster" of individuals—in this case, the Primary Health

Question 92. In the de facto method of census data collection, on what basis is information recorded for individuals?

A. Place of birth

B. Location at the time of enumeration

C. Place of employment

D. Usual place of residence

Correct answer: B

A census is the systematic enumeration of a population. There are two main methods for counting individuals. The de facto method counts each individual based on their location at the time of the census enumeration. This means people are counted wherever they happen to be on the designated census night, regardless of where they normally live. This method provides a snapshot of the population present in a specific area on a specific day. The alternative method is the de jure method, which counts individuals based on their usual or permanent place of

Question 93. Which of the following represents the correct sequence of steps in a Randomized Controlled Trial (RCT)?

A. Follow-up → Manipulation → Assessment → Randomization

B. Randomization → Manipulation → Follow-up → Assessment

C. Assessment → Randomization → Follow-up → Manipulation

D. Manipulation → Assessment → Follow-up → Randomization

Correct answer: B

A Randomized Controlled Trial (RCT) is a prospective experimental study that follows a specific, logical sequence to test the efficacy of an intervention. The correct sequence of steps is :1. Recruitment and Baseline Assessment : Eligible participants are recruited, and baseline data is collected.2. Randomization : The participants are randomly allocated to either the intervention group or the control group. This is a critical step to ensure the groups are comparable.3. Manipulation (Intervention) : The intervention group receives the new treatment, while the control group receives a placebo or standard care.4. Follow-up : Both groups are followed forward in time for a pre-specified period to monitor for the development of the outcome of interest.5. Assessment : At the end of the follow-up period, the outcomes are measured and compared between the two groups to determine the effect of the intervention.This sequence ensures a rigorous and unbiased evaluation of the intervention.

Question 94. An urban city has a total population of 70,00,000, of which 30% live in slum areas. How many Urban Primary Health Centres (UPHCs) are required to serve the slum population?

A. 22

B. 32

C. 42

D. 52

Correct answer: C

According to the norms of the National Urban Health Mission (NUHM) in India, primary healthcare services in urban areas are delivered through Urban Primary Health Centers (UPHCs). The population norm for establishing a UPHC is one UPHC for every 50,000 people.First, we need to calculate the population residing in slum areas :Slum population = 70,00,000 (total population) × 30% (0.30) = 21,00,000.Next, we calculate the number of UPHCs required for this population based on the norm of 1 per 50,000 :Number of UPHCs = 21,00,000 (slum population) / 50,000 (population per UPHC)Number of UPHCs = 2100 / 50 = 42.Therefore, 42 Urban Primary Health Centers are required to serve the slum population of this city.

Question 95. Which mosquito species lacks a siphon tube and rests parallel to the surface of water?

A. Anopheles

B. Culex

C. Aedes

D. Mansonia

Correct answer: A

The larval stage of mosquitoes is aquatic, and different genera can be identified by their distinct morphology and resting posture in the water. The larvae of the Anopheles genus are

Question 96. A 60-year-old patient with diabetes dies in the hospital after being diagnosed with COVID-19. Under which type of surveillance would this death be reported?

A. Active surveillance

B. Passive surveillance

C. Sentinel surveillance

D. Syndromic surveillance

Correct answer: B

Passive surveillance is the most common and routine form of disease surveillance. It relies on the regular, periodic reporting of disease data by healthcare providers and institutions (like hospitals and laboratories) to public health authorities. In this system, the health department does not actively seek out cases but waits for the reports to be submitted. The reporting of a death from a notifiable disease like COVID-19 by a hospital to the local or national health authority is a classic example of passive surveillance. Active surveillance (A) involves public health staff actively going out to collect data by contacting healthcare providers or the community. Sentinel surveillance (C) involves monitoring trends in a specific disease through a network of selected reporting sites. Syndromic surveillance (D) tracks health data based on clinical syndromes rather than confirmed diagnoses.

Question 97. What term describes the time interval between acquiring an infection and reaching the phase of maximum infectivity?

A. Generation time

B. Communicable period

C. Incubation period

D. Serial interval

Correct answer: A

In infectious disease epidemiology, several time intervals are used to describe the transmission dynamics of a disease.1. The Incubation period (C) is the time from exposure to an infectious agent to the onset of clinical symptoms.2. The Communicable period (B) is the entire time during which an infected person can transmit the disease.3. The Serial interval (D) is the time between the onset of symptoms in a primary case and the onset of symptoms in a secondary case that they infected.4. The Generation time (A) is the time interval between the receipt of infection by a host

Question 98. Which measure is used to evaluate the extent to which objectives and targets are achieved and to assess the quality of outcomes of a health program?

A. Planning

B. Surveillance

C. Monitoring

D. Evaluation

Correct answer: D

The management of a health program involves a cycle of planning, implementation, monitoring, and evaluation. While monitoring (C) is the routine, ongoing process of tracking a program's activities and outputs to ensure it is proceeding as planned, evaluation is a more periodic and in-depth assessment. Evaluation is the systematic process of determining the relevance, effectiveness, efficiency, and impact of a program in relation to its stated objectives and targets. It is specifically concerned with assessing the quality and value of the results and outcomes achieved, not just tracking the process. It aims to answer the question, "Did the program achieve what it set out to do, and was it worth it?" Planning (A) is the initial design phase, and surveillance (B) is the ongoing collection of health data.

Question 99. young boy presents with features suggestive of rickets. Which government program is specifically designed to address this nutritional deficiency?

A. Integrated Child Development Services (ICDS)

B. National Nutritional Deficiency Control Programme

C. Anemia Mukt Bharat

D. Mid-Day Meal Scheme

Correct answer: A

No explanation is available for this recall question yet.

Question 100. 78-year-old man with diabetes mellitus and hypertension presents with epistaxis. Initial measures, including nasal packing, fail to control the bleeding. Which artery should be ligated to effectively manage the bleeding?

A. Sphenopalatine artery

B. Anterior Ethmoidal artery

C. Posterior Ethmoidal artery

D. Greater Palatine artery

Correct answer: A

In cases of severe posterior epistaxis (nasal bleeding) that are refractory to conservative measures like nasal packing, surgical intervention is often required. The vast majority of significant posterior bleeds originate from the rich vascular network on the lateral nasal wall. The primary blood supply to this area comes from the sphenopalatine artery (SPA), which is the terminal branch of the internal maxillary artery. The SPA enters the nasal cavity through the sphenopalatine foramen and supplies most of the posterior nasal septum and lateral nasal wall. Endoscopic surgical ligation or cauterization of the sphenopalatine artery is the modern gold-standard procedure for controlling intractable posterior epistaxis. While the anterior and posterior ethmoidal arteries (B, C) also contribute to the nasal blood supply, they are responsible for bleeding from the superior aspect of the nose and are ligated less commonly.

Question 101. A patient presents with a nasal injury evident on a lateral X-ray of the nose. Which procedure is appropriate for managing this condition?

A. Tilley's probe

B. Luc's forceps

C. Denis Browne probe

D. Walsham's forceps

Correct answer: D

The X-ray shows a fracture of the nasal bones. The management of a simple, displaced nasal fracture is closed reduction. This is typically performed within 5-10 days of the injury, before the bones begin to set in a displaced position. Several instruments are designed for this purpose. Walsham's forceps are a pair of specialized forceps used for the reduction of

Question 102. A 27-year-old man presents with recurrent ear infections. Otoscopic examination reveals a central perforation of the tympanic membrane. Tuning fork tests show a negative Rinne on the left, positive Rinne on the right, and Weber test lateralizing to the left ear. What is the type of hearing loss and its side of localization?

A. Left Sensorineural Hearing Loss

B. Right Sensorineural Hearing Loss

C. Left Conductive Hearing Loss

D. Right Conductive Hearing Loss

Correct answer: C

The tuning fork test results provide a clear diagnosis.1. Rinne's Test : This compares air conduction (AC) to bone conduction (BC). In the left ear, the result is negative, meaning BC > AC. This is the classic finding in a conductive hearing loss (CHL), which is consistent with the patient's history of a tympanic membrane perforation. In the right ear, the result is positive (AC > BC), which is normal.2. Weber's Test : A vibrating tuning fork is placed on the midline of the forehead. In a unilateral CHL, the sound is perceived as louder in the affected ear because the conductive loss masks the ambient room noise, making the bone-conducted sound seem more prominent. The test lateralizes to the left, confirming a CHL in the left ear.Combining these findings definitively points to a Left Conductive Hearing Loss.

Question 103. A 16-year-old boy presents with recurrent, profuse epistaxis from the right nasal cavity. Nasal endoscopy reveals a globular mass, and CT imaging shows bowing of the posterior wall of the maxillary sinus. What is the most likely diagnosis?

A. Juvenile Nasopharyngeal Angiofibroma (JNA)

B. Antrochoanal polyp

C. Rhinosporidiosis

D. Rhinoscleroma

Correct answer: A

This clinical presentation is classic for Juvenile Nasopharyngeal Angiofibroma (JNA). This is a benign but locally aggressive and highly vascular tumor that occurs almost exclusively in adolescent males. The cardinal symptoms are unilateral nasal obstruction and recurrent, profuse, spontaneous epistaxis. The tumor originates in the nasopharynx, near the sphenopalatine foramen, and expands to fill the nasopharynx, nasal cavity, and adjacent sinuses. A pathognomonic finding on a CT scan is the anterior bowing of the posterior wall of the maxillary sinus (known as the Holman-Miller sign). This indicates a mass originating in the pterygopalatine fossa and expanding anteriorly. An antrochoanal polyp (B) is a benign mass but is not vascular and does not cause profuse bleeding. Rhinosporidiosis (C) and rhinoscleroma (D) are infectious granulomatous diseases with different presentations.

Question 104. A 20-year-old patient presents with recurrent ear discharge, and otoscopic examination reveals complete absence of the tympanic membrane. What is the most appropriate treatment option?

A. Myringoplasty

B. Radical mastoidectomy

C. Ossiculoplasty

D. Tympanoplasty

Correct answer: D

The patient has a total perforation of the tympanic membrane (eardrum), likely a complication of chronic suppurative otitis media. The goal of treatment is to create a safe, dry ear and, if possible, to restore hearing. Myringoplasty (A) refers to the surgical repair of the tympanic membrane alone, without exploring or reconstructing the middle ear ossicles. Ossiculoplasty (C) refers to the reconstruction of the ossicular chain. Tympanoplasty is a more

Question 105. A 0-year-old patient presents with a slowly enlarging, painless neck mass at the angle of the mandible, and examination reveals a positive Lyre's sign. What is the most likely diagnosis?

A. Thyroid nodule

B. Lymphadenopathy

C. Carotid body tumor

D. Branchial cyst

Correct answer: A

No explanation is available for this recall question yet.

Question 106. During a complicated duodenal surgery, a vessel located posterior to the duodenum is accidentally injured, leading to massive bleeding and accumulation of blood. Which vessel is most likely to have been damaged?

A. Superior mesenteric artery

B. Inferior vena cava

C. Aorta

D. Portal vein

Correct answer: B

The duodenum has critical anatomical relationships with several major retroperitoneal vessels. The first part of the duodenum has the gastroduodenal artery running posteriorly. The second (descending) part lies immediately anterior to the right renal hilum and the Inferior Vena Cava (IVC). The third (horizontal) part of the duodenum crosses anterior to the IVC and the abdominal aorta. During surgery involving mobilization of the duodenum, particularly the second or third parts (e.g., during a Kocher maneuver), the IVC is at significant risk of injury. Given its large size and low pressure, an injury to the IVC would result in massive venous bleeding and a rapidly expanding retroperitoneal hematoma, consistent with the description. While the aorta (Option C) is also posterior, an aortic injury would typically cause pulsatile, arterial hemorrhage. The superior

Question 107. A 5-year-old man presents with a stab wound to the epigastrium,

hypotension, and abdominal guarding. What is the immediate intervention of choice?

A. FAST

B. DPL

C. CT Scan

D. Exploratory Laparotomy

Correct answer: D

The patient's clinical presentation is highly concerning for a significant intra-abdominal injury with ongoing hemorrhage and peritonitis. The combination of a penetrating abdominal injury (stab wound to the epigastrium), hemodynamic instability (hypotension), and signs of peritoneal irritation (guarding) constitutes a clear and absolute indication for immediate surgical intervention. Therefore, an Exploratory Laparotomy is the definitive and life-saving procedure required. Any delay for further diagnostic imaging would be inappropriate and dangerous. While a FAST (Focused Assessment with Sonography for Trauma) scan (Option A) is useful for detecting free fluid in stable patients, it should not delay surgery in an unstable patient. A CT scan (Option C) is the imaging modality of choice for stable patients with penetrating trauma but is contraindicated in an unstable patient. Diagnostic Peritoneal Lavage (DPL) (Option B) has largely been replaced by FAST and CT and is not the preferred step here.

Question 108. A patient with a known diagnosis of anal carcinoma presents for follow-up with a mass near the anal opening. Which group of lymph nodes is most likely to be involved?

A. Superficial inguinal lymph nodes

B. Deep inguinal lymph nodes

C. External iliac lymph nodes

D. Internal iliac lymph nodes

Correct answer: A

The lymphatic drainage of the anal canal is divided by the dentate (pectinate) line. Tumors located below the dentate line, which includes the anal margin and perianal skin, drain primarily to the superficial inguinal lymph nodes. This is because this lower portion of the anal canal is derived from the ectoderm and shares the same lymphatic drainage pathway as the skin of the lower trunk, perineum, and lower limbs. Since the question describes a mass "near the anal opening," it implies a lesion in this lower region. In contrast, tumors located above the dentate line drain upwards along the superior rectal vessels to the perirectal and then to the internal iliac lymph nodes (Option D). The external iliac nodes (Option C) become involved later. Therefore, for a distal anal canal carcinoma, the superficial inguinal lymph nodes are the first and most likely echelon of nodes to be involved.

Question 109. Which of the following statements correctly describes polydioxanone (PDS) suture material?

A. Non-absorbable

B. Monofilament

C. Braided multifilament

D. Derived from collagen

Correct answer: B

No explanation is available for this recall question yet.

Question 110. A -year-old child presents to the emergency department with generalized convulsions following a high-grade fever. Which medication is most appropriate as the first-line treatment to control seizures in this acute febrile episode?

A. Diazepam

B. Valproate

C. Fosphenytoin

D. Doxycycline / Amoxicillin

Correct answer: A

The patient is presenting with a febrile seizure. The immediate priority in managing any ongoing seizure (convulsion) is to terminate the seizure activity to prevent neurological injury and other complications. The first-line medications for the acute termination of a seizure, including a febrile seizure, are benzodiazepines. These drugs are fast-acting and highly effective. Diazepam is a classic choice and can be administered intravenously or, very commonly in the pediatric setting, rectally as a gel for rapid absorption. Other benzodiazepines like lorazepam (IV) or midazolam (intranasal, buccal, or IV) are also first-line options. Fosphenytoin (C) or phenytoin is a second-line agent used if the seizure does not respond to benzodiazepines. Valproate (B) is a maintenance antiepileptic drug and is not used for acute seizure termination. Antibiotics (D) would be used if a bacterial infection is the cause of the fever, but not for the seizure itself.

Question 111. A child with coarse facial features and developmental delay is found to have α-L-iduronidase deficiency on enzyme testing. Which substances are most likely to accumulate in this disorder?

A. Dermatan sulfate + Chondroitin sulfate

B. Only Dermatan sulfate

C. Dermatan sulfate + Heparan sulfate

D. Heparan sulfate + Chondroitin sulfate

Correct answer: C

A deficiency of the enzyme α-L-iduronidase is characteristic of Hurler syndrome (Mucopolysaccharidosis Type I or MPS I). This enzyme is crucial for the degradation of specific glycosaminoglycans (GAGs). In its absence, two GAGs, dermatan sulfate and heparan sulfate,

accumulate within the lysosomes of various cells throughout the body. This accumulation leads to the characteristic clinical features of the disease, including coarse facial features (gargoylism), developmental delay, corneal clouding, organomegaly, and skeletal deformities. The other options are incorrect as they list different combinations of GAGs. Accumulation of only dermatan sulfate (Option B) is associated with Maroteaux-Lamy syndrome (MPS VI). The combination of dermatan sulfate and chondroitin sulfate (Option A) or heparan sulfate and chondroitin sulfate (Option D) is not characteristic of any single major MPS disorder. Thus, the correct accumulated substrates for an α-L-iduronidase deficiency are dermatan sulfate and heparan sulfate.

Question 112. A -month-old infant has begun complementary feeding using the katori method. What quantity of food and feeding frequency is recommended on the first day?

A. 1/2-1 katori, 4 times daily

B. 1/2-1 katori, 5 times daily

C. 1½-1 katori, 6 times daily

D. 1/2-1 katori, 8 times daily

Correct answer: A

According to the Infant and Young Child Feeding (IYCF) guidelines, when initiating complementary feeding for an infant aged 6-8 months, the process should be gradual.

Question 113. A newborn is delivered to an HIV-positive mother with a viral load of 200 copies/mL. What antiretroviral prophylaxis is recommended for the neonate?

A. Nevirapine for 6 weeks with exclusive breastfeeding

B. Nevirapine + Zidovudine for 6 weeks with exclusive breastfeeding

C. No prophylaxis needed as mother is on ART

D. Nevirapine + Zidovudine for 12 weeks with exclusive breastfeeding

Correct answer: D

According to the guidelines from the National AIDS Control Organisation (NACO) of India for the prevention of parent-to-child transmission (PPTCT) of HIV, the antiretroviral (ARV) prophylaxis for the newborn depends on the maternal viral load and the infant's risk of acquisition. For infants considered at high risk of acquiring HIV, an extended and more potent prophylaxis regimen is recommended. A maternal viral load greater than 1000 copies/mL near the time of delivery places the infant in this high-risk category. The recommended regimen in this scenario is a dual-drug therapy consisting of daily Zidovudine and Nevirapine for a total of 12 weeks. This is more aggressive than the standard 6-week Nevirapine monotherapy (Option A) given to low-risk infants. Option B is incorrect due to the shorter 6-week duration.

Question 114. A -month-old infant presents with recurrent infections and failure to

thrive, and investigations reveal adenosine deaminase (ADA) deficiency. Which immunodeficiency disorder is most likely responsible for these findings?

A. Severe Combined Immunodeficiency (SCID)

B. Hypogammaglobulinemia

C. DiGeorge Syndrome

D. Wiskott-Aldrich Syndrome

Correct answer: A

The clinical presentation of an infant with failure to thrive and recurrent, severe infections starting in the first few months of life is highly suggestive of Severe Combined Immunodeficiency (SCID). SCID is a group of genetic disorders characterized by a profound defect in the function of both T-lymphocytes and B-lymphocytes (and sometimes NK cells), leading to a virtually absent adaptive immune system. A specific and well-known genetic cause of autosomal recessive SCID is a deficiency of the enzyme adenosine deaminase (ADA). ADA is essential for purine metabolism. Its deficiency leads to the accumulation of toxic metabolites (deoxyadenosine) that are particularly lethal to developing lymphocytes. This results in a severe lymphopenia and a complete lack of T- and B-cell function. The finding of ADA deficiency is therefore diagnostic for a specific subtype of SCID.

Question 115. A -year-old child presents after choking on a peanut. What is the most appropriate immediate management step?

A. Chest compressions

B. Back blows

C. Abdominal thrusts

D. Endotracheal intubation

Correct answer: C

The most appropriate immediate management for a 2-year-old conscious child who has choked on a foreign object is the administration of abdominal thrusts, also known as the Heimlich maneuver. This procedure is designed to create a forceful expulsion of air from the lungs, which can dislodge the obstructing object from the

Question 116. A -year-old child with known chronic kidney disease presents with bowing of the legs. Laboratory findings show normal calcium levels, elevated phosphate, increased alkaline phosphatase, and low 5-hydroxy vitamin D. What is the most appropriate next step in management?

A. Calcium supplementation with phosphate binder

B. Phosphate binder

C. Oral calcium with Vitamin D

D. Growth hormone therapy

Correct answer: A

The clinical presentation of bowing legs (renal rickets) along with the laboratory findings in a child with chronic kidney disease (CKD) points to CKD-Mineral and Bone Disorder (CKD-MBD). The key pathological features are hyperphosphatemia (due to decreased renal excretion) and secondary hyperparathyroidism. The elevated phosphate directly stimulates parathyroid hormone (PTH) release and also reduces the synthesis of active vitamin D (calcitriol), leading to impaired calcium absorption. The increased alkaline phosphatase reflects high bone turnover. The primary goal of management is to control the hyperphosphatemia, which is driving the process. Therefore, initiating a phosphate binder is essential. Concurrently, calcium supplementation is needed to manage the tendency towards hypocalcemia and to help bind dietary phosphate. Vitamin D supplementation (Option C) would also be required, but controlling phosphate levels first is critical to prevent metastatic calcification. A phosphate binder alone (Option B) addresses only one part of the problem.

Question 117. A 5-year-old man presents with joint discomfort. Synovial fluid analysis shows rhomboid-shaped crystals with positive birefringence under polarized light microscopy. What is the most likely diagnosis?

A. Gout

B. Rheumatoid arthritis

C. Osteoarthritis

D. Pseudogout

Correct answer: D

The definitive diagnosis of a crystal arthropathy is made by examining the synovial fluid under a polarized light microscope. The findings described are pathognomonic for pseudogout, also known as Calcium Pyrophosphate Deposition (CPPD) disease. The crystals of calcium pyrophosphate dihydrate are characteristically rhomboid-shaped or rod-shaped. When viewed under polarized light with a red compensator, they exhibit weakly positive birefringence. This means they appear blue when their long axis is parallel to the axis of the compensator and yellow when perpendicular. This is in direct contrast to gout (A), which is caused by monosodium urate crystals. Gout

Question 118. A 7-year-old patient presents with chronic low back pain that improves with activity and is associated with early morning stiffness, along with a past history of anterior uveitis. X-ray imaging of the sacroiliac joints is normal. What is the most appropriate next step in evaluation?

A. MRI of the sacroiliac joints

B. Anti-CCP antibody testing

C. Repeat plain radiograph

D. CT scan of the sacroiliac joints

Correct answer: A

This young patient's clinical presentation is highly suggestive of an inflammatory spondyloarthropathy, with ankylosing spondylitis (AS) being the most likely diagnosis. The key features are the inflammatory nature of the back pain (improves with activity, worse with rest, morning stiffness) and the history of an extra-articular manifestation, acute anterior uveitis. In the early stages of the disease, plain X-rays of the sacroiliac (SI) joints are often normal, as it can take several years for the characteristic changes of sacroiliitis (erosions and sclerosis) to become visible. The most sensitive imaging modality for detecting early inflammatory changes is a Magnetic Resonance Imaging (MRI) of the sacroiliac joints. An MRI with STIR (Short Tau Inversion Recovery) sequences can detect active inflammation in the form of bone marrow edema in the subchondral bone of the SI joints, a finding known as sacroiliitis, long before any changes are visible on an X-ray.

Question 119. A 5-year-old man presents to the emergency department after a motorbike accident with a closed midshaft tibial fracture. Six hours later, he develops severe pain out of proportion to the injury that worsens with passive dorsiflexion and is not relieved by analgesics. Distal pulses are palpable, but there is sensory loss in the first web space. What is the most appropriate next step in management?

A. Elevate the limb and observe

B. Immediate fasciotomy

C. Administer opioid analgesics

D. Apply a cast and schedule follow-up

Correct answer: B

This is a classic, textbook presentation of acute compartment syndrome of the leg, an orthopedic emergency. The key signs are present :1. Pain out of proportion to the injury.2. Pain on passive stretch of the muscles in the affected compartment (pain with dorsiflexion stretches the muscles of the posterior compartment).3. Paresthesia (the loss of sensation in the first web space indicates compression of the deep peroneal nerve in the anterior compartment).The presence of distal pulses is a notoriously unreliable sign and does not rule out the diagnosis. In a patient with a clear clinical diagnosis of compartment syndrome, there is no need for further investigation like pressure measurements. The condition is a surgical emergency that requires an immediate surgical fasciotomy. This procedure involves making long incisions through the skin and the fascia overlying the affected compartments to release the pressure and restore blood flow. Any delay in performing a fasciotomy can lead to irreversible muscle necrosis, nerve damage, and potentially limb loss.

Question 120. A 6-year-old woman (P2L2) presents with secondary amenorrhea for months. Her laboratory results show FSH 6 IU/L, LH 6 IU/L, and AMH . ng/mL. What is the most likely diagnosis?

A. PCOS

B. Premature ovarian failure

C. Hyperprolactinemia

D. Hypothalamic amenorrhea

Correct answer: B

The patient has secondary amenorrhea. The key to the diagnosis lies in the hormonal profile, which indicates the level of the hypothalamic-pituitary-ovarian axis at which the problem lies. The laboratory results show markedly elevated Follicle-Stimulating Hormone (FSH) and Luteinizing Hormone (LH) levels. This indicates that the pituitary gland is trying to stimulate the ovaries, but the ovaries are not responding. This is the definition of hypergonadotropic hypogonadism, or primary ovarian insufficiency. When this occurs in a woman under the age of 40, it is termed Premature Ovarian Failure (POF). The very low Anti-Müllerian Hormone (AMH) level of 0.5 is also a strong indicator of diminished ovarian reserve, consistent with ovarian failure. In PCOS (A) and hypothalamic amenorrhea (D), FSH and LH would be normal or low.

Question 121. A 6-year-old woman presents with heavy menstrual bleeding, and ultrasound reveals an endometrial thickness of 6 mm. What is the next best step in management?

A. Hysterectomy

B. Endometrial biopsy

C. HPV testing

D. Progesterone therapy

Correct answer: B

A perimenopausal woman (age 46) presenting with heavy menstrual bleeding (menorrhagia) requires a thorough evaluation to rule out underlying pathology. The ultrasound finding of a significantly thickened endometrium (16 mm) is abnormal and raises concern for endometrial hyperplasia or carcinoma. In any woman over the age of 45 with abnormal uterine bleeding, or in a younger woman with risk factors and a thickened endometrium, it is mandatory to obtain a tissue sample for histological examination. Therefore, the most appropriate next step is an endometrial biopsy. This can be performed in an outpatient setting using a Pipelle catheter or via a formal hysteroscopy with dilatation and curettage (D&C). This will provide a definitive diagnosis and guide further management. Hysterectomy (A) or progesterone therapy (D) would only be considered after the histology is known. HPV testing (C) is for cervical cancer screening.

Question 122. In a case of atonic postpartum hemorrhage that does not respond to medical treatment, what is the next best step in management?

A. Uterine devascularization

B. Hysterectomy

C. Bakri balloon tamponade

D. Compression suture

Correct answer: C

The patient has postpartum hemorrhage (PPH) due to uterine atony that is refractory to first-line medical management (uterotonic drugs like oxytocin, methylergometrine, etc.). The management algorithm follows a stepwise approach, moving from less invasive to more invasive interventions. After medical management fails, the next step is to use uterine tamponade. This can be achieved by packing the uterus with gauze or, more commonly and effectively, by inserting an intrauterine balloon device, the most common of which is the Bakri

Question 123. A 8-year-old woman at 4 weeks of pregnancy is diagnosed with severe preeclampsia, and magnesium sulfate is initiated using the Pritchard regimen for seizure prophylaxis. What is the correct loading dose of magnesium sulfate in this regimen?

A. 4 gm IV

B. 6 gm IV + 5 gm IM each buttock

C. 14 gm total

D. 20 gm total

Correct answer: C

Magnesium sulfate is the drug of choice for the prevention and treatment of eclamptic seizures. Several regimens are used for its administration, one of which is the Pritchard regimen. This is a combined intravenous and intramuscular regimen. The loading dose of the Pritchard regimen consists of two components given simultaneously :1. A 4-gram dose of magnesium sulfate administered as a slow intravenous (IV) infusion over 15-20 minutes.2. A 10-gram dose administered as a deep intramuscular (IM) injection, with 5 grams being injected into each buttock (often mixed with a local anesthetic to reduce pain).Therefore, the total loading dose administered is 4 gm (IV) + 10 gm (IM) = 14 grams total. This is followed by a maintenance dose of 5 gm IM every 4 hours. The Zuspan regimen uses a 4-6 gm IV load followed by a continuous IV infusion.

Question 124. Sequence of repair of episiotomy :

A. Mucosa → Muscle → Skin

B. Skin → Muscle → Mucosa

C. Muscle → Mucosa → Skin

D. Mucosa → Skin → Muscle

Correct answer: A

An episiotomy is a surgical incision of the perineum and posterior vaginal wall. The repair is a layered closure performed in a specific sequence to ensure proper anatomical reapproximation and healing. The repair begins from the deepest layer and works outwards to the most superficial layer.

Question 125. A woman in her first trimester of pregnancy has a history of toxoplasmosis and is IgG positive. What advice should be given regarding continuation of the pregnancy?

A. Continue pregnancy, no risk

B. Abort - high risk

C. Continue, risk exists

D. Repeat IgM serology

Correct answer: A

The serological finding of a positive Toxoplasma IgG antibody and a negative IgM antibody (implied) in a woman before or in early pregnancy indicates a past, chronic infection. The presence of IgG signifies that the mother has immunity to toxoplasmosis. The greatest risk of congenital toxoplasmosis, which can cause severe fetal damage, occurs when a mother acquires a primary (new) infection during her pregnancy. In a woman who is already immune from a previous infection, the risk of reactivating the infection and transmitting it to the fetus is extremely low, almost negligible, unless the mother is severely immuno compromised (e.g., with advanced AIDS). Therefore, for an immunocompetent woman with evidence of a past infection, the advice is to reassure her and continue the pregnancy, as there is no significant risk of congenital transmission.

Question 126. A child is born with absence of a finger. What is the most likely diagnosis?

A. Amniotic band syndrome

B. Arthrogryposis multiplex

C. Polyhydramnios

D. Congenital constriction ring

Correct answer: A

No explanation is available for this recall question yet.

Question 127. A G2L2 woman who delivered at home with the assistance of a trained dai presents with uterine prolapse. Weakness of which anatomical structure is most likely responsible?

A. Round ligament

B. Broad ligament

C. Cardinal ligament

D. Uterosacral ligament

Correct answer: C

The uterus is supported in the pelvis by a complex system of ligaments and the muscles of the pelvic floor. The primary, most important structure for apical support of the uterus and cervix, preventing them from descending or prolapsing, is the cardinal ligament, also known as the

transverse cervical ligament or Mackenrodt's ligament. This is a strong, fan-shaped condensation of endopelvic fascia that extends from the lateral aspects of the cervix and upper vagina to the pelvic sidewalls.

Question 128. A postmenopausal woman presents with blood-stained vaginal discharge and has a blood pressure of 70/00 mm Hg. What should be the next best step in her management?

A. Reassure

B. PV exam, Pap smear, TVUSG

C. Refer to cardiologist

D. Wait and watch

Correct answer: B

Postmenopausal bleeding or blood-stained discharge is a significant gynecological symptom that must be thoroughly investigated, as it is considered a sign of endometrial cancer until proven otherwise. The first and most important step is a comprehensive gynecological evaluation. This initial workup should include :1. A Per Vaginal (PV) examination to assess the size and mobility of the uterus and to look for any cervical or vaginal lesions.2. A Pap smear to screen for cervical abnormalities, which can also occasionally be a cause of bleeding.3. A Transvaginal Ultrasound (TVUSG). This is a crucial investigation to measure the endometrial thickness. A thin endometrium (typically <4-5 mm) in a postmenopausal woman makes endometrial cancer highly unlikely, whereas a thickened endometrium is suspicious and mandates further investigation with an endometrial biopsy.

Question 129. Postpartum anticoagulant of choice :

A. LMWH

B. Warfarin

C. Aspirin

D. Clopidogrel

Correct answer: A

The postpartum period is a time of significantly increased risk for venous thromboembolism (VTE). When anticoagulation is required for the treatment or prevention of VTE in the

Question 130. A woman in labor is found to have a prolapsed umbilical cord. What is the most appropriate immediate next step in management?

A. Push cord back into cervix

B. Emergency C-section

C. Head-low, lift part, fill bladder

D. Vaginal delivery with forceps

Correct answer: B

Umbilical cord prolapse is an obstetric emergency where the umbilical cord descends in front of the fetal presenting part. The primary risk is cord compression, which can lead to fetal hypoxia and death. The immediate management is aimed at relieving the pressure on the cord. This involves intrauterine resuscitation measures such as manually elevating the presenting part and placing the mother in a knee-chest or steep Trendelenburg position (C). However, these are temporizing measures performed while preparing for the definitive treatment. The definitive management for a cord prolapse with a viable fetus is immediate delivery. Unless a vaginal delivery is imminent and can be accomplished very rapidly and safely (e.g., with forceps in a fully dilated patient), the standard of care is to perform an emergency Cesarean section. This is the quickest and safest way to deliver the baby and prevent catastrophic cord compression.

Question 131. A patient with cervical cancer is found to have associated hydronephrosis. According to FIGO staging, what is the stage of the disease?

A. IIA

B. IIIA

C. IIIB

D. IV

Correct answer: C

The FIGO (International Federation of Gynecology and Obstetrics) staging system for cervical cancer is based on the clinical extent

Question 132. A 0-year-old G2P1 woman in labor with a history of previous cesarean section presents in active labor with fetal bradycardia and maternal tachycardia, and cervical dilation of cm. What is the most appropriate next step in management?

A. Instrumental delivery

B. ARM

C. Increase oxytocin dose

D. Emergency Cesarean section

Correct answer: D

This clinical scenario is highly concerning for a uterine rupture, a catastrophic complication of a trial of labor after a previous Cesarean section (TOLAC). The most specific sign of uterine rupture is an abnormality in the fetal heart rate, most commonly a sudden and profound fetal bradycardia. Other signs include maternal tachycardia (due to hemorrhage), abdominal pain, and a loss of fetal station. The patient is in active labor and has developed these ominous signs. This constitutes an obstetric emergency that poses an immediate threat to the lives of both the mother and the fetus. The only appropriate next step is to perform an emergency Cesarean section to deliver the baby and repair the uterus as quickly as possible. Any action that would delay delivery, such as attempting an instrumental delivery (A) at 8cm or augmenting labor (B, C), would be contraindicated and dangerous.

Question 133. Day 1 of 8-day cycle. Which hormone profile is correct?

A. ↑P, ↑E, ↓FSH, ↓LH

B. ↑P, ↓E, ↓FSH, ↓LH

C. ↓P, ↓E, ↑LH, ↑FSH

D. ↑E, ↓P, ↑LH, ↑FSH

Correct answer: A

Day 21 of a standard 28-day menstrual cycle falls in the mid-luteal phase. This phase occurs after ovulation (which happens around day 14). After ovulation, the ruptured follicle transforms into the corpus luteum. The corpus luteum is a temporary endocrine gland that produces large amounts of progesterone (P) and, to a lesser extent, estrogen (E). Therefore, in the mid-luteal phase, both progesterone and estrogen levels are elevated. Progesterone is the dominant hormone in this phase, responsible for preparing the endometrium for implantation. The high levels of both estrogen and progesterone exert a strong negative feedback on the hypothalamus and pituitary gland, which suppresses the release of gonadotropins. As a result, both FSH and LH levels are low. This hormonal milieu is maintained until the corpus luteum degenerates towards the end of the cycle if pregnancy does not occur.

Question 134. Correct order of maneuvers in shoulder dystocia :

A. McRoberts → Rubin → Gaskin → Zavanelli

B. Zavanelli → McRoberts → Gaskin → Rubin

C. Rubin → Gaskin → McRoberts → Zavanelli

D. McRoberts → Suprapubic pressure → Rubin → Zavanelli

Correct answer: A

Management of shoulder dystocia involves a sequence of escalating maneuvers, often remembered by the mnemonic HELPERR.1. Help (Call for help).2. Episiotomy.3. Legs : The McRoberts maneuver is the initial and simplest maneuver.4. Pressure : Suprapubic pressure.5. Enter : Internal rotational maneuvers, such as the Rubin maneuver or Woods' corkscrew maneuver.6. Remove the posterior arm.7. Roll the patient : This is the Gaskin maneuver, where the mother is moved to an all-fours position.The Zavanelli maneuver is a final, last-resort maneuver of cephalic replacement followed by C-section.Option (A) presents a logical progression from an initial external maneuver (McRoberts), to

Question 135. A woman presents with amenorrhea, linea nigra, nausea, vomiting, bluish vagina. These are :

A. Probable signs of pregnancy

B. confirmed pregnancy

C. Menopause

D. Normal menstrual cycle

Correct answer: A

The signs and symptoms of pregnancy are traditionally categorized into presumptive, probable, and positive signs.Presumptive signs are subjective symptoms that the woman experiences, such as amenorrhea, nausea, and vomiting.Probable signs are objective signs that are detected by the examiner but are not 100% specific to pregnancy. These include uterine enlargement, a positive pregnancy test (detecting hCG), and physical changes like linea nigra (a dark line on the abdomen) and Chadwick's sign (the bluish discoloration of the vagina and cervix).Positive signs are those that are irrefutably due to the presence of a fetus, such as the detection of a fetal heartbeat, visualization of the fetus on ultrasound, or palpation of fetal movements by the examiner.Since the signs listed (amenorrhea, nausea, linea nigra, bluish vagina) fall into the presumptive and probable categories, they make pregnancy highly likely but do not definitively confirm it.

Question 136. A woman attends her first antenatal visit and reports her last menstrual period as months ago. Which ultrasound parameter is the most accurate for dating the pregnancy at this gestational age?

A. Biparietal diameter

B. Mean gestational sac diameter

C. Abdominal circumference

D. Crown-rump length

Correct answer: D

An accurate estimation of the gestational age is a critical component of antenatal care. Ultrasound is the most reliable method for dating a pregnancy in the first trimester. The most accurate biometric parameter for determining the gestational age during the first trimester (up to about 13-14 weeks) is the crown-rump length (CRL). The CRL is the measurement of the length of the embryo or fetus from the top of its head (crown) to the bottom of its buttocks (rump). The CRL grows in a very predictable manner during early pregnancy, and its measurement has a very small margin of error (typically +/- 5 to 7 days). The mean gestational sac diameter (B) is used very early, before the embryo is visible. The biparietal diameter (A) and abdominal circumference (C) are parameters used for dating and assessing growth in the second and third trimesters, but they are less accurate than the first-trimester CRL.

Question 137. A 6-week pregnant woman reports normal fetal movements. A non-stress test performed for 0 minutes shows one acceleration and no decelerations. What is the most appropriate next step in management?

A. Emergency C-section

B. Induce labor

C. Wait and observe

D. Continue NST for 40 min

Correct answer: D

A Non-Stress Test (NST) is a common antenatal test used to assess fetal well-being. A "reactive" NST, which is reassuring, is defined by the presence of two or more fetal heart rate accelerations (of at least 15 beats per minute, lasting at least 15 seconds) within a 20-minute period. In this case, after 20 minutes, only one acceleration has been observed. This is classified

Question 138. What is the most frequent etiological factor responsible for squamous cell carcinoma occurring at the base of the tongue?

A. EBV

B. HPV

C. HCV

D. CMV

Correct answer: B

Cancers of the oropharynx, which includes the base of the tongue, the tonsils, the soft palate, and the pharyngeal walls, have two distinct etiologies. Historically, the main risk factors were tobacco and alcohol use. However, over the past few decades, there has been a dramatic increase in the incidence of oropharyngeal squamous cell carcinomas that are driven by infection with high-risk strains of the Human Papillomavirus (HPV), particularly HPV-16. HPV-positive oropharyngeal cancers are now the most common type in many Western countries. They have a distinct biological profile, are more responsive to treatment, and are associated with a significantly better prognosis compared to HPV-negative cancers. In contrast, Epstein-Barr Virus (EBV) (A) is the primary cause of nasopharyngeal carcinoma, not oropharyngeal cancer.

Question 139. A patient receives sevoflurane and succinylcholine for abdominal surgery and subsequently develops postoperative muscle rigidity. What is the drug of choice for management?

A. Dantrolene

B. Diazepam

C. Propranolol

D. Paracetamol

Correct answer: A

The patient's presentation of muscle rigidity and likely hyperthermia after receiving a volatile anesthetic (sevoflurane) and a depolarizing muscle relaxant (succinylcholine) is the classic picture of malignant hyperthermia (MH). MH is a life-threatening pharmacogenetic disorder of skeletal muscle calcium regulation. In susceptible individuals, these triggering agents cause a massive, uncontrolled release of calcium from the sarcoplasmic reticulum, leading to sustained muscle contraction (rigidity), a hypermetabolic state, rhabdomyolysis, and a rapid rise in body temperature. The specific and life-saving antidote for malignant hyperthermia is dantrolene.

Dantrolene works by binding to the ryanodine receptor (RyR1) on the sarcoplasmic reticulum, directly inhibiting the further release of calcium and thereby relaxing the muscles and controlling the hypermetabolic crisis.

Question 140. A patient develops erythema, facial flushing, and hypotension after receiving a muscle relaxant. Which drug is most likely responsible for these adverse effects?

A. Cisatracurium

B. Atracurium

C. Rocuronium

D. Vecuronium

Correct answer: B

The symptoms of erythema (redness), facial flushing, and hypotension are characteristic of histamine release. Several neuromuscular blocking agents (muscle relaxants) can cause non-immunological histamine release from mast cells. Among the options listed, atracurium is well-known for this side effect, particularly when administered rapidly or in large doses. The released histamine causes vasodilation (leading to hypotension and flushing) and can also cause bronchospasm. Cisatracurium (A) is an isomer of atracurium that was specifically developed to have a much lower propensity for causing histamine release, making it a more hemodynamically stable alternative. The aminosteroid muscle relaxants, rocuronium (C) and vecuronium (D), are also known to cause minimal to no histamine release and are generally associated with excellent cardiovascular stability.

Question 141. A person assaults a co-worker, claiming that the co-worker has been conspiring to harm him. He reports hearing voices and is noted to have disorganized speech on examination. What should be the next step in management?

A. Refer for anger management.

B. Refer for psychiatric assessment and check if he is fit for trial.

C. He is not responsible because is mentally ill

D. Start immediate trials and punishment

Correct answer: B

The individual is exhibiting clear signs of a severe psychotic illness, including paranoid delusions ("co-worker has been plotting to harm him"), auditory hallucinations ("hears voices"), and disorganized speech. These symptoms strongly suggest that his violent act was a direct result of his mental illness. In the legal context, when a person commits a crime while potentially suffering from a severe mental illness, their mental state at the time of the offense and their current mental state are of critical importance. The legal principle of mens rea (guilty mind) may not be fulfilled if the person was unable to understand the nature or wrongfulness of their actions due to psychosis. Therefore, the immediate and appropriate next step is to refer

the individual for a thorough psychiatric assessment. This evaluation will serve two purposes : to diagnose and treat the underlying

Question 142. A patient develops dyspnea and tachycardia seven days after undergoing knee replacement surgery. Which investigation would best confirm the suspected diagnosis?

A. V/Q ratio

B. D-dimer

C. Chest X-ray

D. CT Pulmonary Angiography (CTPA)

Correct answer: D

The clinical presentation of acute-onset dyspnea and tachycardia in a patient who has recently undergone major orthopedic surgery (a significant risk factor for deep vein thrombosis) is highly suspicious for a Pulmonary Embolism (PE). While other investigations provide supportive evidence, the gold-standard imaging modality for confirming the diagnosis of PE is

Question 143. A 1-year-old woman presents with amnesia for events after her father’s death in a road traffic accident. Her symptoms have persisted for two weeks, and she experiences recurrent flashbacks. What is the most likely diagnosis?

A. Dissociative disorder

B. Major depression

C. PTSD

D. Acute stress disorder

Correct answer: D

The key to this diagnosis is the duration of symptoms. The patient is experiencing symptoms characteristic of a trauma- and stressor-related disorder, including amnesia (a dissociative symptom) and flashbacks (an intrusive symptom), following a clear traumatic event (her father's death). Both Acute Stress Disorder (ASD) and Post-Traumatic Stress Disorder (PTSD) share similar symptoms. However, the diagnostic criterion that differentiates them is the timeline. Acute Stress Disorder is diagnosed when these symptoms last for a duration of three days to one month following the traumatic event. Since the patient's symptoms have persisted for two weeks, the diagnosis of ASD is appropriate. If the symptoms were to persist for more than one month, the diagnosis would then be changed to PTSD (Option C). While she has dissociative symptoms, Acute Stress Disorder is a more specific and encompassing diagnosis that includes the intrusive flashbacks as well.

Question 144. A patient with schizophrenia who has been well controlled on haloperidol for the past two years now presents with orofacial dyskinesia, choreiform and tic-like movements, along with dystonic features. What is the most

likely diagnosis, and what is the appropriate treatment?

A. Acute dystonia - Ropinirole

B. Tardive dyskinesia - Valbenazine

C. Akathisia - Propranolol

D. Oral tremor - amantadine

Correct answer: B

The patient's symptoms are characteristic of Tardive Dyskinesia (TD), a serious, often irreversible extrapyramidal side effect that can develop after long-term use of antipsychotic medications, particularly first-generation agents like haloperidol. The key features described—involuntary orofacial dyskinesia (e.g., lip-smacking, tongue protrusion), choreiform movements (jerky, dance-like), and tics—are hallmarks of TD. Acute dystonia (Option A) and akathisia (Option C) are typically early-onset side effects. The treatment for TD involves discontinuing or reducing the dose of the offending agent if possible, or switching to a second-generation antipsychotic with a lower risk profile (like clozapine). For symptomatic treatment, VMAT2 inhibitors are the drugs of choice. Valbenazine is an FDA-approved VMAT2 inhibitor specifically for the treatment of tardive dyskinesia. It works by reducing the release of dopamine in the central nervous system, thereby alleviating the involuntary movements.

Question 145. A patient reports that whenever he is outdoors, he follows the way birds fly because he believes God is communicating instructions to him through the birds. What is the most likely psychiatric diagnosis?

A. Delusional perception

B. Visual hallucination

C. Delusional memory

D. Sudden Delusional ideas

Correct answer: A

This scenario is a classic example of a delusional perception, which is one of Schneider's first-rank symptoms of schizophrenia. A delusional perception is a two-stage process. First, there is a normal, real perception of an object or event (the patient sees birds flying, which is a true perception). Second, an immediate and profound delusional meaning is attached to this real perception, which is not understandable in the context of the patient's culture or background ("God is giving me instructions through the birds"). It is not a visual hallucination (Option B) because the patient is actually seeing real birds. It is not a delusional memory (Option C) as it is not related to a past event. It is also not a sudden delusional idea (Option D) because the delusion is directly triggered by and linked to a real-time perception.

Question 146. Mr. K is brought to a psychiatrist by his friend, who reports that Mr. K insists on everything being perfectly arranged and has difficulty discarding stored items, leading to impairment in his work performance. Mr. K considers himself a

perfectionist and denies having any problem. What is the most likely diagnosis?

A. Narcissistic Personality

B. Obsessive Compulsive Personality Disorder

C. Paranoid Delusion

D. Dependent personality

Correct answer: A

No explanation is available for this recall question yet.

Question 147. A patient is brought by a social worker after a recent earthquake. He is found living in a town far from his home, is unable to recall how he traveled 10 km, and cannot remember his personal identity. There is no history of substance use. What is the most likely diagnosis?

A. Dissociative amnesia

B. Dissociative fugue

C. DID

D. Selective amnesia

Correct answer: B

This presentation is the classic definition of dissociative fugue. This disorder is characterized by two main components. First, there is sudden, unexpected travel away from one's home or usual place of work, coupled with an inability to recall one's past. Second, there is confusion about personal identity or the assumption of a new identity. The patient's travel of 110 km, his amnesia for the journey, and his inability to recall his own identity following a significant stressor (an earthquake) are all hallmark features. Dissociative amnesia (Option A) involves memory loss, typically for a specific traumatic event, but does not necessarily include purposeful travel or confusion about identity. Dissociative Identity Disorder (DID) (Option