NEET PG 2020 Question Paper

226 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. Upward movement of the thyroid gland is prevented by which of the following structures?

A. Berry's Ligament

B. Pretracheal fascia

C. Sternothyroid muscle

D. Thyrohyoid membrane

Correct answer: C

The thyroid gland is intimately connected to the larynx by the suspensory ligament of Berry and is enclosed within the pretracheal fascia, which also attaches to the larynx. These connections cause the thyroid to move superiorly and inferiorly during swallowing. However, excessive upward movement is restrained by the infrahyoid muscles, commonly known as the strap muscles. The sternothyroid muscle, in particular, plays a crucial role in this restraint. Originating from the posterior surface of the manubrium sterni and inserting onto the oblique line of the thyroid cartilage, this muscle lies directly anterior to the thyroid gland. Its primary action is to depress the larynx after it has been elevated during swallowing or phonation. By anchoring the larynx (and thus the attached thyroid) to the sternum, the sternothyroid muscle acts as a tether, physically preventing significant superior displacement of

Question 2. The elongated path of the left recurrent laryngeal nerve is a result of the persistence of which embryonic aortic arch?

A. 3rd Arch

B. 4th Arch

C. 5th Arch

D. 6th Arch

Correct answer: D

The asymmetrical course of the right and left recurrent laryngeal nerves is a direct consequence of the embryological development of the aortic arches. Both nerves initially hook around the 6th aortic arch on their respective sides. On the right side, the distal portion of the 6th arch and the entire 5th arch artery degenerate. This allows the right recurrent laryngeal nerve to ascend and hook underneath the next persistent structure, which is the 4th aortic arch

artery (forming the right subclavian artery). On the left side, however, the distal part of the 6th aortic arch persists to form the ductus arteriosus (which later becomes the ligamentum arteriosum). Because this structure remains, the left recurrent laryngeal nerve is trapped and cannot ascend. It is held down in the thorax, where it loops under the arch of the aorta (formed by the left 4th arch) adjacent to the ligamentum arteriosum. This explains its longer, recurrent course from the chest back up to the larynx.

Question 3. Ligation of the hepatic artery will compromise blood flow to which of the following arteries?

A. Right gastric and Right gastroepiploic artery

B. Right gastric and Left gastric artery

C. Right gastroepiploic and Short gastric vessels

D. Right gastric and Short gastric vessels

Correct answer: A

The common hepatic artery is a branch of the celiac trunk. It gives rise to the gastroduodenal artery before continuing as the hepatic artery proper. Ligation of the common hepatic artery

Question 4. Which of the following nerves does not contribute to the innervation of the extraocular muscles?

A. Ophthalmic nerve

B. Oculomotor nerve

C. Trochlear nerve

D. Abducent nerve

Correct answer: A

The motor innervation to the six extraocular muscles is provided by three specific cranial nerves. This is commonly remembered by the mnemonic (LR6SO4)3. The oculomotor nerve (CN III) supplies the superior rectus, inferior rectus, medial rectus, and inferior oblique muscles. The trochlear nerve (CN IV) supplies only the superior oblique muscle. The abducent nerve (CN VI) supplies only the lateral rectus muscle. The ophthalmic nerve, which is the first division of the trigeminal nerve (CN V1), is a purely sensory nerve. It is not involved in motor supply to the extraocular muscles. Instead, it provides sensation to the eyeball, cornea, conjunctiva, upper eyelid, forehead, and scalp. Therefore, the ophthalmic nerve is not part of the motor nerve supply to the muscles that move the eye.

Question 5. Which of the following structures in females is a remnant of the Wolffian duct?

A. Pouch of Douglas

B. Uterovesical pouch

C. Gartner's cyst

D. Broad ligament

Correct answer: C

In embryonic development, males and females initially have both Wolffian (mesonephric) and Müllerian (paramesonephric) ducts. In females, the absence of testosterone causes the Wolffian ducts to degenerate, while the Müllerian ducts develop into the fallopian tubes, uterus, and upper vagina. However, remnants of the Wolffian duct can sometimes persist in females. These vestigial structures are known as Gartner's ducts and are typically found in the broad ligament or along the lateral walls of the cervix and vagina. If these ducts accumulate fluid, they can form a benign, fluid-filled sac known as a Gartner's cyst. These cysts are the most common remnant of the Wolffian duct system in females. The Pouch of Douglas (A) and the uterovesical pouch (B) are peritoneal reflections. The broad ligament (D) is a peritoneal fold that supports the female reproductive organs.

Question 6. Claudication resulting from popliteal-femoral incompetence primarily affects which area?

A. Thigh

B. Calf

C. Buttocks

D. Feet

Correct answer: B

Claudication refers to muscle pain or cramping that is induced by exercise and relieved by rest. It is a hallmark symptom of peripheral artery disease (PAD), caused by insufficient blood flow to meet the metabolic demands of the exercising muscle. The location of the claudication pain directly corresponds to the muscle group distal to the arterial stenosis or occlusion. The femoropopliteal arterial segment, comprising the superficial femoral artery and the popliteal artery, is the most common site of atherosclerotic disease in the lower limbs. When this segment is incompetent (stenosed), blood flow is restricted to the muscles of the lower leg. The calf muscles (gastrocnemius and soleus) have a very high oxygen demand during walking. Therefore, stenosis in the femoral or popliteal arteries most classically and primarily causes claudication pain in the calf. Buttock and thigh claudication (A, C) suggest more proximal disease in the aortoiliac segment.

Question 7. A patient shows hyperextension at the metacarpophalangeal (MCP) joints and flexion at the interphalangeal (IP) joints. Which muscle is most likely paralyzed?

A. Extensor digitorum

B. Interossei and lumbricals

C. Adductor pollicis

D. Pronator quadratus muscle

Correct answer: B

The posture described is a classic claw hand deformity. This deformity arises from an imbalance between the extrinsic and intrinsic muscles of the hand. The intrinsic hand muscles, specifically the lumbricals and interossei, are responsible for flexing the metacarpophalangeal (MCP) joints and extending the interphalangeal (IP) joints. When these intrinsic muscles are paralyzed (typically due to a combined ulnar and median nerve injury), their actions are lost. This allows the unopposed action of the extrinsic muscles to dominate. The long extensor, extensor digitorum, pulls the MCP joints into hyperextension. Simultaneously, the long flexors, flexor digitorum superficialis and profundus, pull the IP joints into flexion. This combination of MCP hyperextension and IP flexion creates the characteristic claw-like appearance. Therefore, paralysis of the interossei and lumbricals is the direct cause of this deformity.

Question 8. A tumor located in the uncinate process of the pancreas is most likely to compress which artery?

A. Portal Vein

B. Superior Mesenteric Artery

C. Inferior Mesenteric Artery

D. Common Hepatic Artery

Correct answer: B

The uncinate process is a hook-like projection of pancreatic tissue that extends from the lower part of the head of the pancreas. It has a crucial anatomical relationship with the major mesenteric vessels. The uncinate process curves posteriorly behind the superior mesenteric vein and is situated just to the left of the superior mesenteric artery (SMA). The SMA and superior mesenteric vein emerge from behind the neck of the pancreas and pass anterior to the uncinate process. Because of this intimate anatomical relationship, a tumor or mass arising from the uncinate process can directly invade or compress these vessels. Specifically, it is positioned to compress the superior mesenteric artery and vein. The other vessels listed are not in direct contact with the uncinate process and would not be compressed by a tumor in this specific location.

Question 9. A boy in a motorbike accident has a CT scan showing injury to the posterior part of the superior temporal gyrus. Which deficit is he most likely to experience?

A. Fluent Aphasia

B. Non-fluent Aphasia

C. Conduction Aphasia

D. None of the above

Correct answer: A

The posterior portion of the superior temporal gyrus in the dominant cerebral hemisphere

Question 10. A 65-year-old woman presents with a vascular injury involving the inferior frontal gyrus. Which functional area is most likely to be affected?

A. Visual

B. Auditory

C. Wernicke

D. Motor speech

Correct answer: D

The posterior part of the inferior frontal gyrus in the dominant hemisphere (typically the left) is the location of Broca's area. This area is the primary center for the motor programming of speech. It is responsible for planning the coordinated muscle movements of the larynx, tongue, and lips that are necessary for articulate speech production. A vascular injury, such as a stroke, affecting this region leads to Broca's aphasia, also known as expressive or non-fluent aphasia. Patients with this condition have difficulty producing fluent, grammatical speech. Their speech is often slow, labored, and consists of short, telegraphic phrases, although their comprehension of language generally remains intact. The primary visual cortex (A) is in the occipital lobe, the primary auditory cortex (B) is in the superior temporal gyrus, and Wernicke's area (C) for language comprehension is in the posterior superior temporal gyrus.

Question 11. In fetal circulation, which location has the highest oxygen concentration?

A. Superior Vena Cava (SVC)

B. Inferior Vena Cava (IVC)

C. Right Ventricle

D. Aorta

Correct answer: B

In fetal circulation, oxygenation occurs at the placenta, not the lungs. Highly oxygenated and nutrient-rich blood travels from the placenta to the fetus via the single umbilical vein. The umbilical vein enters the abdomen and sends a major portion of its blood through a shunt called the ductus venosus, which bypasses the liver and drains directly into the inferior vena cava (IVC). This freshly oxygenated blood from the placenta mixes with the deoxygenated blood returning from the lower body of the fetus within the IVC. Despite this mixing, the segment of the IVC just before it enters the right atrium contains the most highly oxygenated blood found anywhere in the fetal body. This stream is preferentially shunted across the foramen ovale into the left atrium to supply the fetal brain and heart. The superior vena cava (A) carries only deoxygenated blood from the upper body.

Question 12. What does a ventilation-perfusion (V/Q) ratio of infinity indicate?

A. No O_2 goes from alveoli to blood and no CO_2 goes from blood to alveoli

B. Dead Space

C. The PO2 of alveolar air is 159 mmHg and PCO2 is 40 mmHg

D. Partial pressures of O2 and CO2 are equal

Correct answer: B

The ventilation-perfusion (V/Q) ratio describes the relationship between alveolar ventilation (V) and pulmonary capillary blood flow (Q). When the V/Q ratio is infinity (V/Q = ∞), it signifies that there is ventilation but zero perfusion (Q = 0). This means that a particular alveolus is receiving fresh air but has no blood flowing through its surrounding capillaries to participate in gas exchange. This condition is known as alveolar dead space. Because there is no gas exchange, the air within this dead space alveolus does not lose oxygen to the blood or

Question 13. Which proteoglycan is found in the glomerular basement membrane?

A. Keratan Sulphate 1

B. Keratan Sulphate 2

C. Heparan Sulphate

D. Chondroitin Sulphate

Correct answer: C

The glomerular basement membrane (GBM) is a crucial component of the renal filtration barrier. In addition to its structural components like type IV collagen and laminin, it contains proteoglycans that play a vital role in its function. The most important proteoglycan in the GBM is heparan sulfate. The glycosaminoglycan side chains of heparan sulfate are rich in negatively charged carboxyl and sulfate groups. This imparts a strong overall negative charge to the GBM. This negative charge creates an electrostatic barrier that repels other negatively charged molecules, such as albumin. This charge-selective filtration is essential for preventing the loss of plasma proteins into the urine. Loss of heparan sulfate, as seen in some glomerular diseases, leads to increased permeability to albumin and results in proteinuria.

Question 14. A 35-year-old woman who spent long hours watching TV with her hands under her head now reports tingling in her arm. Which type of nerve fibers is most likely involved?

A. A-Fibers

B. B-Fibers

C. C-Fibers

D. Sympathetic Nerve Fibers

Correct answer: A

Nerve fibers are classified based on their diameter, myelination, and conduction velocity. A-fibers are the largest in diameter and are myelinated, giving them the fastest conduction velocities. They are further subdivided (A-alpha,

Question 15. What is the name of the reflex that inhibits gastric emptying when

acidic or hypertonic contents enter the duodenum?

A. Enterogastric

B. Gastroileal

C. Gastrocolic

D. Myenteric

Correct answer: A

The enterogastric reflex is a key physiological mechanism that regulates the rate of gastric emptying. This is an inhibitory reflex that is initiated by stimuli in the duodenum (entero-) and acts on the stomach (-gastric). When chyme enters the duodenum from the stomach, chemoreceptors and stretch receptors in the duodenal wall are activated. The most potent stimuli for this reflex are high acidity, high osmolarity (hypertonic solutions), the presence of fats and proteins, and duodenal distension. Activation of these receptors triggers both neural (short and long reflexes) and hormonal (release of cholecystokinin and secretin) pathways that act to inhibit gastric motility and slow down the rate of gastric emptying. This ensures that the duodenum is not overwhelmed and has adequate time to neutralize the acid and digest the nutrients before receiving more chyme from the stomach.

Question 16. In multiple sclerosis, what causes the slowed conduction of motor and sensory pathways?

A. Defect in the node of Ranvier

B. Loss of myelin sheath

C. Leaking of sodium channels

D. Leaking calcium channels

Correct answer: B

Multiple sclerosis (MS) is an autoimmune demyelinating disease of the central nervous system. The primary pathological process is the inflammatory destruction of oligodendrocytes, the cells responsible for producing myelin in the CNS. The myelin sheath is a fatty, insulating layer that surrounds axons. It is essential for

Question 17. In a patient receiving warfarin therapy, which clotting factor exhibits a reduction in gamma-carboxyglutamate residues?

A. Factor 2

B. Factor 11

C. Tissue Factor

D. Factor 5

Correct answer: A

Warfarin is an oral anticoagulant that works by inhibiting the enzyme Vitamin K epoxide reductase. This enzyme is necessary for recycling Vitamin K into its active form. Active Vitamin K is an essential cofactor for the enzyme gamma-glutamyl carboxylase, which performs a

crucial post-translational modification on several clotting factors. This modification is the addition of a carboxyl group to glutamate residues, forming gamma-carboxyglutamate. This process is required for the factors to bind calcium and become functionally active. The Vitamin K-dependent clotting factors are Factor II (Prothrombin), VII, IX, and X. In a patient on warfarin therapy, this carboxylation process is inhibited, leading to the production of non-functional clotting factors with decreased or absent gamma-carboxyglutamate residues. Therefore, Factor II would be affected. Factors XI, Tissue Factor (III), and V are not Vitamin K-dependent.

Question 18. Why is blood stored in citrate-phosphate-dextrose (CPD) preferred over acidic-citrate-dextrose (ACD) for transfusion in hypoxic patients?

A. It has less P50

B. It is less acidie

C. The fall in 2, 3 DPG is less

D. None of the above

Correct answer: C

The ability of hemoglobin to release oxygen to the tissues is modulated by several factors, most importantly the concentration of 2,3-diphosphoglycerate (2,3-DPG) within the red blood cells. A higher level of 2,3-DPG facilitates oxygen release (a rightward shift of the oxygen-hemoglobin dissociation curve), which is crucial for hypoxic patients. During the storage of blood, red blood cells continue to metabolize glucose, and the level of 2,3-DPG progressively declines (the storage lesion). Citrate-phosphate-dextrose (CPD) and its successor, CPDA-1 (which adds adenine), are superior to the older Acid-Citrate-Dextrose (ACD) solution because their higher pH and phosphate content help to better preserve the levels of 2,3-DPG during storage. This means that blood stored in CPD maintains a better oxygen-releasing capacity, making it more effective for transfusion into patients who are hypoxic and in critical need of tissue oxygenation.

Question 19. Which structure is commonly called the window of the limbic system?

A. Hypothalamus

B. Amygdala

C. Hippocampus

D. Thalamus

Correct answer: B

The Amygdala is commonly called the “window of the limbic system” because it acts as a key center for interpreting emotional significance and linking emotions with behavior. The amygdala is an almond-shaped group of nuclei located deep in the medial temporal lobe of the brain and forms an important part of the Limbic system, which regulates emotions, motivation, and certain aspects of memory.The amygdala receives sensory information from different areas of the brain, particularly through the Thalamus and cerebral cortex. It evaluates this information to determine its emotional importance, especially in situations involving fear, threat, or reward.

Because it

Question 20. Hepcidin inhibits which of the following?

A. Absorption of cobalamine

B. Transfer of iron into enterocytes

C. Folic acid synthesis

D. Respiratory oxidase

Correct answer: B

Hepcidin is the master regulatory hormone of iron homeostasis. It is produced by the liver in response to high iron levels or inflammation. Hepcidin's primary function is to decrease the amount of iron available in the circulation. It achieves this by binding to and inducing the internalization and degradation of the iron exporter protein, ferroportin. Ferroportin is located on the basolateral membrane of duodenal enterocytes and on the surface of macrophages. Its job is to transport iron from inside these cells into the plasma. By destroying ferroportin, hepcidin effectively traps iron inside enterocytes (preventing its absorption from the gut) and inside macrophages (preventing its recycling from old red blood cells). The question states it inhibits the transfer of iron into enterocytes, which is slightly imprecise. Hepcidin inhibits the transfer of iron out of enterocytes into the blood, thereby regulating total body iron absorption.

Question 21. Which technique is employed to measure current flow through a single ion channel?

A. Patch-clamp

B. Voltage clamp

C. Iontophoresis

D. Galvanometry

Correct answer: A

The patch-clamp technique is a revolutionary electrophysiological method that allows for the study of ionic currents flowing through individual ion channels. The technique involves using a micropipette with a very fine tip (around 1 micrometer in diameter) to form a high-resistance seal (a giga-seal) with a small patch of the cell membrane. This electrically isolates the patch of membrane. In the cell-attached configuration, this setup allows the recording of the picoampere-level currents that flow when a single ion channel within that patch opens and closes. Further variations of the technique (whole-cell, inside-out, outside-out) allow for the detailed characterization of channel properties, such as their gating, conductance, and pharmacology. The voltage clamp (B) technique is used to measure ionic currents across the entire membrane of a cell, not a single channel.

Question 22. Cerebral blood flow is regulated by all of the following except :

A. Blood pressure

B. Arterial PCO2

C. Potassium ions

D. Oxygen levels (PO2)

Correct answer: C

Cerebral blood flow (CBF) is tightly regulated to maintain a constant supply of oxygen and nutrients to brain tissue. Several physiological factors influence this regulation. One major factor is blood pressure, through a mechanism called cerebral autoregulation. Within a certain range of arterial pressure, cerebral vessels constrict or dilate to keep blood flow relatively constant.Another important regulator is arterial carbon dioxide (PCO_2). Increased PCO_2 causes cerebral vasodilation, which increases cerebral blood flow, while decreased PCO_2 leads to vasoconstriction and reduced blood flow. Similarly, oxygen levels (PO_2) also influence cerebral circulation. When arterial oxygen levels fall significantly (hypoxia), cerebral vessels

Question 23. A 4-year-old boy from a first-degree consanguineous marriage has urine that darkens to nearly black upon standing. He has a healthy sibling, normal growth and development, and no other medical issues. Which substance is most likely elevated in this patient?

A. Methylmalonate

B. Homogentisate

C. Phenylpyruvate

D. alpha-ketoisovalerate

Correct answer: B

This clinical presentation is pathognomonic for alkaptonuria. This is a rare autosomal recessive inborn error of metabolism, which is consistent with the history of consanguinity. The disorder is caused by a deficiency in the enzyme homogentisate 1,2-dioxygenase, which is involved in the degradation pathway of the amino acids tyrosine and phenylalanine. The enzyme deficiency leads to the accumulation of its substrate, homogentisic acid (homogentisate), in the body. This acid is excreted in the urine. When the urine is left standing and exposed to air, the homogentisate oxidizes and polymerizes to form a dark black pigment, causing the characteristic color change. Apart from this finding, children with alkaptonuria are typically asymptomatic, with normal growth and development. The other compounds listed are elevated in different metabolic disorders

Question 24. Which of the following statements accurately describes the different structural levels of proteins?

A. Secondary structure is the three-dimensional structure of protein

B. Secondary structure is stabilized by disulfide bonds

C. Primary, secondary and tertiary structures destroyed during denaturation

D. The secondary and tertiary structure depends on the sequence of amino acids

Correct answer: D

This statement describes a fundamental principle of protein folding. The primary structure of a protein is its unique linear sequence of amino acids, linked by peptide bonds. This sequence contains all the information necessary to determine the protein's final three-dimensional

Question 25. When the insulin-to-glucagon ratio is low, which enzyme becomes active?

A. Glucokinase

B. Hexokinase

C. Phosphofructokinase

D. Glucose-6-phosphatase

Correct answer: D

A decreased insulin-to-glucagon ratio is the hormonal signal for the fasting or starved state. In this state, the liver's primary role is to produce and release glucose into the bloodstream to maintain euglycemia for use by other tissues, particularly the brain. This is achieved through glycogenolysis and gluconeogenesis. The final, critical step in both of these pathways is the conversion of glucose-6-phosphate to free glucose. This reaction is catalyzed by the enzyme glucose-6-phosphatase, which is found primarily in the liver and kidneys. Glucagon signaling activates this pathway, making glucose-6-phosphatase a key active enzyme during fasting. In contrast, the other enzymes listed—glucokinase, hexokinase, and phosphofructokinase—are key enzymes of glycolysis, the pathway that consumes glucose. These enzymes are active in the fed state when the insulin-to-glucagon ratio is high.

Question 26. Ochronosis is due to the accumulation of :

A. Homogentisic acid

B. Phenylpyruvate

C. Xanthurenate

D. Glyoxylate

Correct answer: A

Ochronosis is a clinical syndrome characterized by the deposition of a bluish-black pigment in connective tissues throughout the body, including cartilage, skin, and sclera. This pigmentation is a pathognomonic feature of the metabolic disease alkaptonuria. Alkaptonuria is caused by a deficiency of the enzyme homogentisate oxidase, which leads to the accumulation of its substrate, homogentisic acid. This excess homogentisic acid polymerizes into a melanin-

Question 27. Bilirubin in serum can be measured by-

A. Van den Bergh reaction

B. Ehrlich's Reaction

C. Schlesinger's Reaction

D. Fouchet's Reaction

Correct answer: A

The classic laboratory method for measuring serum bilirubin levels is the Van den Bergh reaction. This reaction is based on the principle of the diazo reaction, first described by Ehrlich. It uses a diazo reagent (diazotized sulfanilic acid) which reacts with bilirubin to form a colored product called azobilirubin, which can be measured spectrophotometrically. A key aspect of the Van den Bergh test is its ability to differentiate between conjugated (direct) and unconjugated (indirect) bilirubin. Conjugated bilirubin is water-soluble and reacts directly with the diazo reagent, giving the direct bilirubin value. Unconjugated bilirubin, which is bound to albumin, requires the addition of an accelerator like alcohol or caffeine to react. The total bilirubin is measured after adding the accelerator, and the indirect bilirubin is calculated by subtracting the direct from the total value.

Question 28. If a DNA sample contains28% adenine, what percentage of cytosine will it contain?

A. 23%

B. 25%

C. 46%

D. 22%

Correct answer: D

This calculation is based on Chargaff's rules of base pairing in double-stranded DNA. The rules state that the amount of adenine (A) is always equal to the amount of thymine (T), and the

Question 29. Which vitamin, when taken in high doses, can lead to cystoid macular edema?

A. Vitamin A

B. Vitamin D

C. Vitamin E

D. Niacin

Correct answer: D

High doses of niacin (Vitamin B3), particularly in its immediate-release form, are used therapeutically to treat hyperlipidemia. While effective, this therapy can be associated with several side effects. One well-recognized but uncommon ocular side effect is niacin-induced cystoid macular edema (CME). This condition involves the development of fluid-filled cysts in the macula of the retina, leading to blurred or distorted central vision. The mechanism is not fully understood but is thought to be related to a disruption of the blood-retinal barrier. Importantly, niacin-induced CME is typically reversible upon discontinuation of the vitamin. It is a dose-dependent effect usually seen with doses greater than 1.5 grams per day. The other vitamins listed are not typically associated with causing cystoid macular edema at high doses.

Question 30. Which of the following statements about Huntington’s chorea is true?

A. There is a loss of function type of mutation.

B. It is an autosomal recessive.

C. It is a trinucleotide repeat expansion type of disorder.

D. Increased number of CAA repeats.

Correct answer: C

Huntington's disease (chorea) is a classic example of a trinucleotide repeat expansion disorder. The underlying genetic defect is an unstable expansion of a CAG (cytosine-adenine-guanine) trinucleotide repeat sequence within the first exon of the Huntingtin (HTT) gene on chromosome 4. In unaffected individuals, the number of CAG repeats is typically less than27. In individuals with Huntington's disease, this sequence is expanded to 40 repeats or more. The expanded CAG repeat is translated into an abnormally long polyglutamine tract in the huntingtin protein, which causes the protein to misfold and aggregate, leading to a toxic gain-of-function (A is incorrect) that results in the progressive neurodegeneration of the striatum. The disease is inherited in an autosomal dominant pattern (B is incorrect). The repeat is CAG, not CAA (D is incorrect).

Question 31. Addition of which amino acid will increase UV absorption-

A. Tryptophan

B. Leucine

C. Proline

D. Arginine

Correct answer: A

The ability of proteins to absorb ultraviolet (UV) light is almost entirely due to the presence of the three aromatic amino acids : tryptophan, tyrosine, and phenylalanine. These amino acids have aromatic ring structures that strongly absorb UV light, with a characteristic peak absorbance at a wavelength of approximately280 nm. Of these three, tryptophan has the highest molar absorptivity and contributes the most to the UV absorption of a typical protein. Tyrosine also absorbs significantly, while phenylalanine absorbs much less strongly. The other amino acids listed—leucine, proline, and arginine—are aliphatic or basic amino acids that do not have aromatic rings and therefore do not absorb

Question 32. The richest source of Vitamin B12 is

A. Meat

B. Green leafy vegetables

C. Corn oil

D. Sunflower oil

Correct answer: A

Vitamin B12 (cobalamin) is unique among vitamins in that it is synthesized exclusively by

microorganisms, such as bacteria and archaea. It is not produced by plants or animals. Animals obtain Vitamin B12 by consuming these microorganisms directly or by absorbing it from their own gut microflora. The vitamin then accumulates in their tissues. Consequently, the only natural dietary sources of Vitamin B12 for humans are animal-derived products. The richest sources include organ meats (especially liver and kidney), shellfish (like clams and oysters), muscle meat (beef, lamb), fish, poultry, eggs, and dairy products. Plant-based foods, such as green leafy vegetables, and plant-derived oils, like corn oil and sunflower oil, contain no naturally occurring Vitamin B12. This is why individuals following a strict vegan or vegetarian diet are at high risk for developing Vitamin B12 deficiency unless they consume fortified foods or take supplements.

Question 33. Which amino acid serves as the precursor for nitric oxide synthesis?

A. Glycine

B. Arginine

C. Tyrosine

D. Threonine

Correct answer: B

Nitric oxide (NO) is a crucial signaling molecule involved in numerous physiological processes, including vasodilation, neurotransmission, and immune responses. It is synthesized endogenously by a family of enzymes called nitric oxide synthases (NOS). These enzymes catalyze the conversion of the amino acid L-arginine into nitric oxide and L-citrulline. This reaction requires molecular oxygen and

Question 34. True about non-competitive antagonist :

A. Km remains same, Vmax decreases

B. Km remains same, Vmax increases

C. Km decreases, Vmax increases

D. Km increases, Vmax increases

Correct answer: A

The question uses Michaelis-Menten kinetics terms (Km, Vmax) to describe a non-competitive antagonist, but these terms are for enzyme inhibitors. Assuming the question means a non-competitive inhibitor : a non-competitive inhibitor binds to the enzyme at a site distinct from the active site (an allosteric site). This binding can occur whether the substrate is bound or not. The inhibitor's binding changes the conformation of the enzyme, rendering it catalytically inactive. Because the inhibitor does not compete with the substrate for the active site, it does not affect the enzyme's affinity for the substrate, and therefore, the Km (Michaelis constant) remains the same. However, by inactivating a fraction of the enzyme molecules, the inhibitor effectively reduces the total concentration of functional enzyme available. This leads to a decrease in the Vmax (maximum reaction velocity), as the reaction can never reach the

maximum velocity it would have in the absence of the inhibitor, no matter how much substrate is added.

Question 35. Werner syndrome, characterized by premature aging, results from a defect in which of the following?

A. Telomerase

B. Caspase

C. DNA topoisomerase

D. DNA helicase

Correct answer: A

No explanation is available for this recall question yet.

Question 36. Which of the following types of dietary fiber is soluble in water?

A. Pectin

B. Lignin

C. Hemicellulose

D. Cellulose

Correct answer: A

Dietary fiber is broadly classified into two categories based on its solubility in water : soluble and insoluble. Soluble fibers dissolve in water to form a viscous, gel-like substance in the digestive tract. This type of fiber is known to help lower blood cholesterol and glucose levels. Pectin, which is abundant in fruits like apples and citrus, is a primary example of a soluble fiber. Other examples include gums (like guar gum) and mucilages (found in psyllium). In contrast, insoluble fibers do not dissolve in water. They add bulk to the stool and promote regular bowel movements. Cellulose, hemicellulose, and lignin are the main types of insoluble fiber. They are the primary structural components of plant cell walls and are found in whole grains, nuts, and vegetables like cauliflower and green beans.

Question 37. According to NCEP-ATP III criteria, which of the following is not included in the metabolic syndrome definition?

A. High LDL

B. Hypertriglyceridemia

C. Central Obesity

D. Hypertension

Correct answer: A

The National Cholesterol Education Program Adult Treatment Panel III (NCEP-ATP III) defines the metabolic syndrome as the presence of three or more of five specific cardiometabolic risk factors. These five criteria are :1. Central Obesity : Defined as a waist circumference >102 cm (40 in) in men or >88 cm (35 in) in women.2. Hypertriglyceridemia : Defined as triglycerides ≥

150 mg/dL or being on drug treatment for high triglycerides.3. Low HDL Cholesterol : Defined as HDL-C < 40 mg/dL in men or < 50 mg/dL in women.4. Hypertension : Defined as blood pressure ≥ 130/85 mmHg or being on drug treatment for hypertension.5. Elevated Fasting Glucose : Defined as fasting plasma glucose ≥ 100 mg/dL or being on drug treatment for hyperglycemia.Notably, a high level of LDL cholesterol is a major risk factor for cardiovascular disease on its own, but it is not one of the defining criteria for the metabolic syndrome according to the NCEP-ATP III guidelines.

Question 38. What underlies the intestine-specific expression of apolipoprotein B-48?

A. DNA splicing

B. DNA rearrangement and loss

C. RNA alternative splicing

D. RNA editing

Correct answer: D

Both apolipoprotein B-100 (ApoB-100) and apolipoprotein B-48 (ApoB-48) are encoded by the same APOB gene. The liver transcribes and translates the entire gene to produce the full-length ApoB-100 protein, which is essential for forming VLDL and LDL particles. In the small intestine, however, a unique post-transcriptional modification occurs called RNA editing. A specific enzyme present only in intestinal cells, apolipoprotein B mRNA editing enzyme

Question 39. A 0-year-old woman reports easy fatigability, exertional breathlessness, weight loss, and frequent falls. Examination shows reduced vibration sense bilaterally, and her hemoglobin is . g/dL. After folate therapy, her anemia improved but her neurological symptoms became worse. What is the most likely explanation for this outcome?

A. Folate not absorbed

B. Unmasked pyridoxine deficiency

C. Deficiency of folate reductase in CNS.

D. Folate therapy caused rapid use of Vitamin B12 stores, aggravating symptoms

Correct answer: D

This patient presents with both macrocytic anemia (suggested by the symptoms) and neurological symptoms (decreased vibration sense, falls), which is highly indicative of Vitamin B12 deficiency. A deficiency of either B12 or folate can cause megaloblastic anemia. However, only B12 deficiency causes the neurological demyelination that leads to subacute combined degeneration of the spinal cord. If a patient with an underlying B12 deficiency is treated with folic acid alone, the folate can partially correct the anemia by providing substrate for DNA synthesis. This is known as a hematological remission. However, this correction consumes the remaining small stores of functional Vitamin B12 for hematopoiesis. This steals the B12 away

from the nervous system, thereby accelerating the progression of the irreversible neurological damage. This phenomenon of worsening neurological symptoms after folate administration is a classic pitfall in the management of megaloblastic anemia.

Question 40. A 0-year-old man presents with a swelling near the knee. Histology reveals numerous giant cells mixed with mononuclear cells. What is the most likely diagnosis?

A. Osteosarcoma

B. Ewing's sarcoma

C. Giant cell tumour

D. Chondrosarcoma

Correct answer: C

This presentation is classic for a Giant Cell Tumor (GCT) of bone. GCTs are typically benign but can be locally aggressive tumors that characteristically arise in the epiphysis of long bones in skeletally mature young adults, with a peak incidence in the 20-40 age range. The most

Question 41. A 0-year-old woman presents with thyroid swelling, has elevated TSH levels, and postoperative pathology shows lymphocytic infiltration along with Hurthle cells. What is the most likely diagnosis?

A. Graves disease

B. Hashimoto's thyroiditis

C. Follicular carcinoma

D. Medullary carcinoma thyroid

Correct answer: B

This combination of clinical and pathological findings is classic for Hashimoto's thyroiditis, the most common cause of hypothyroidism in iodine-sufficient areas. It is an autoimmune disease where the thyroid gland is progressively destroyed. The elevated TSH level indicates that the pituitary gland is trying to stimulate a failing thyroid gland (primary hypothyroidism). The goiter (thyroid swelling) is due to the inflammatory infiltrate and compensatory hyperplasia. The definitive diagnosis comes from the histology, which is characterized by two key features : a dense, diffuse lymphocytic infiltration of the thyroid parenchyma, often with the formation of germinal centers, and the presence of Hürthle cells (or Askanazy cells). Hürthle cells are large, eosinophilic thyroid follicular cells that have undergone metaplastic change in response to the chronic inflammation. Graves' disease (A) causes hyperthyroidism with low TSH.

Question 42. Which characteristic finding will appear on a cardiac biopsy from a patient who has sustained reperfusion injury following a myocardial infarction?

A. Waviness of fibers

B. Eosinophilic contraction bands

C. Neutrophils in cardiac cells

D. Swelling of cells

Correct answer: B

Reperfusion injury is a paradoxical phenomenon where tissue damage is exacerbated after blood flow is restored to an area that was previously

Question 43. Which factor is most important in triggering the formation of a thrombus?

A. Vasoconstriction

B. Coagulation cascade activation

C. Platelets activation

D. Endothelial injury

Correct answer: D

The formation of a thrombus is governed by Virchow's triad, which consists of three primary factors : endothelial injury, abnormal blood flow (stasis or turbulence), and hypercoagulability. Of these three, endothelial injury is the single most important factor in the initiation of thrombus formation, particularly in the high-flow arterial system. The normal, intact endothelium has potent antithrombotic properties. When the endothelium is injured, this protective layer is lost, exposing the highly thrombogenic subendothelial extracellular matrix (containing collagen and von Willebrand factor). This exposure immediately triggers platelet adhesion and activation (C), which is a critical subsequent step. The injured endothelial cells also release tissue factor, which initiates the coagulation cascade (B). Vasoconstriction

Question 44. Loss of foot processes is classically seen in which condition?

A. Membranous glomerulitis

B. Minimal Changes Disease

C. Diabetic nephropathy

D. None of the above

Correct answer: B

Minimal Change Disease is a kidney disorder that commonly causes nephrotic syndrome, especially in children. The disease primarily affects the podocytes, which are specialized cells lining the Glomerulus. Podocytes normally have delicate extensions called foot processes that interlock to form filtration slits, helping prevent large proteins from passing into the urine.In Minimal Change Disease, there is diffuse effacement (loss or fusion) of the podocyte foot processes. This structural change disrupts the filtration barrier, allowing proteins—particularly albumin—to leak into the urine, leading to proteinuria, hypoalbuminemia, edema, and other features of nephrotic syndrome.Under light microscopy, the kidney tissue often appears almost normal, which is why the condition is called “minimal change.” However, electron microscopy reveals the characteristic foot process effacement.Other options are incorrect because

membranous glomerulitis and Diabetic nephropathy primarily show basement membrane thickening or immune complex deposition rather than the classic widespread loss of podocyte foot processes.

Question 45. A 3-year-old man has calf pain, swelling, and low-grade fever for weeks. Investigations show elevated creatine kinase, peripheral eosinophilia, and a muscle biopsy with numerous eosinophils. Which interleukin is mainly responsible for the increased eosinophil count in this patient?

A. IL 2

B. IL 4

C. IL 1

D. IL6

Correct answer: B

This patient has eosinophilic myositis, likely secondary to a parasitic infection (like trichinosis) or a hypereosinophilic syndrome. The hallmark is eosinophilia. The development, differentiation, recruitment, and activation of eosinophils are primarily driven by cytokines produced by Th2 helper cells. Interleukin-5 (IL-5) is the most potent and specific cytokine responsible for eosinophil proliferation and activation. However, IL-5 is not listed as an option. Interleukin-4 (IL-4) is the cardinal cytokine that drives the differentiation of naive T-helper cells into the Th2 lineage. This Th2 response is crucial for generating an eosinophil-rich inflammatory response and for stimulating B cells to produce IgE, which is also involved in allergic and anti-parasitic immunity. Therefore, while IL-5 is the direct effector, IL-4 is the master regulator that initiates the Th2 pathway leading to eosinophilia, making it the best answer among the choices.

Question 46. Which of the following statements is true regarding polyarteritis nodosa (PAN)?

A. Microscopy show fibrinoid necrosis in large arteries

B. ANCA is positive

C. 30% of people have HbsAg positive

D. Patient have hypogammaglobulinemia

Correct answer: C

Polyarteritis Nodosa (PAN) is a systemic necrotizing vasculitis that affects medium-sized muscular arteries. The correct statement is that there is a strong association between PAN and Hepatitis B virus (HBV) infection. Approximately 30% of patients with classic PAN are found to be positive for Hepatitis B surface antigen (HBsAg). It is believed that the deposition of immune complexes containing viral antigens in the vessel walls triggers the inflammatory cascade that leads to the vasculitis. Option A is incorrect because PAN affects medium-sized arteries, not large arteries. Option B is incorrect because PAN is characteristically an ANCA-negative

vasculitis, which helps to distinguish it from other vasculitides like microscopic polyangiitis or granulomatosis with polyangiitis. Option D is incorrect; autoimmune diseases are typically

Question 47. A 3-year-old man presents with fatigue and tiredness. Tests reveal hemoglobin of g/dL, an MCV of 01 fL, and a peripheral smear showing macrocytic red cells with hypersegmented neutrophils. What is the most likely cause?

A. Lead poisoning

B. Iron deficiency anemia

C. Chronic alcoholism

D. Hemolytic anemia

Correct answer: C

The patient has a macrocytic anemia (MCV of 101 fL; normal is 80-100). The presence of hypersegmented neutrophils (neutrophils with six or more nuclear lobes) on the peripheral smear is a classic finding in megaloblastic anemia, which is a subtype of macrocytic anemia caused by either folate or vitamin B12 deficiency. One of the most common causes of macrocytic anemia in developed countries is chronic alcoholism. Alcohol is a direct bone marrow suppressant and also interferes with the absorption and metabolism of folate, leading to a folate deficiency and subsequent megaloblastic anemia. Therefore, given the specific peripheral smear findings, chronic alcoholism is a very probable underlying etiology. Lead poisoning and iron deficiency cause microcytic anemia. Hemolytic anemia presents with signs of red cell destruction and a high reticulocyte count.

Question 48. What is the main characteristic of chemotaxis in white blood cells?

A. Increased random movement of neutrophils

B. Increased adhesiveness to the intima

C. Increased phagocytosis

D. Unidirectional locomotion of neutrophils

Correct answer: D

Chemotaxis is a crucial step in the inflammatory response, defining the process by which leukocytes, such as neutrophils, migrate from the bloodstream to a site of injury or infection. The primary feature of chemotaxis is the unidirectional locomotion of these cells along a chemical gradient. Various substances, known as chemoattractants (e.g., bacterial

Question 49. Which of the following anticancer drugs act as competitive inhibitors of tyrosine kinase?

A. Imatinib and Sunitinib

B. Letrozole

C. Bicalutamide

D. Fulvestrant

Correct answer: A

Imatinib and sunitinib are examples of targeted cancer therapy drugs known as tyrosine kinase inhibitors (TKIs). These are small molecules that enter the cell and act as competitive inhibitors at the ATP-binding site of specific tyrosine kinase enzymes. Imatinib is famous for its targeted inhibition of the BCR-ABL tyrosine kinase, which is the driver of chronic myeloid leukemia (CML). Sunitinib is a multi-targeted TKI that inhibits several receptor tyrosine kinases, including VEGFR and PDGFR, and is used in the treatment of renal cell carcinoma and gastrointestinal stromal tumors (GIST). In contrast, the other drugs listed are hormonal therapies : letrozole (B) is an aromatase inhibitor, bicalutamide (C) is an androgen receptor antagonist, and fulvestrant (D) is a selective estrogen receptor degrader.

Question 50. Which legislation in India specifically addresses child sexual abuse?

A. Child Sexual Abuse Prevention Act

B. Protection Of Children from Sexual Offences Act (POCSO)

C. Child Welfare Act

D. Sexual Offences Act

Correct answer: B

The primary and comprehensive law in India that deals specifically with child sexual abuse is the Protection of Children from Sexual Offences (POCSO) Act, 2012. This landmark legislation was enacted to provide a robust legal framework for the protection of children from offenses of sexual assault, sexual harassment, and pornography. The POCSO Act is gender-neutral, defining a 'child' as any person below the age of 18. It introduces child-friendly procedures for reporting, investigation, and trial, such as recording the child's statement at their residence and avoiding repeated questioning. It also mandates specific timelines for the investigation and trial process and prescribes stringent punishments for the offenses. The other options are either generic descriptions or

Question 51. If relatives state that a deceased person had a tattoo that is no longer visible during postmortem examination, how can the tattoo be detected or identified?

A. Examine the Lymph node

B. Spectrophotometer

C. Ordinary light

D. X-ray

Correct answer: A

Tattoos are created by injecting insoluble ink pigments into the dermis layer of the skin. Over time, some of these pigment particles are engulfed by macrophages and transported via the lymphatic system to the regional lymph nodes, where they are deposited and stored permanently. This process, known as lymphatic drainage, is a normal physiological response. In

a deceased person, especially if the skin is decomposed, burned, or obscured, the tattoo itself may become invisible. However, the pigment will still be present within the regional draining lymph nodes. Therefore, during a postmortem examination, the forensic pathologist can dissect and examine the regional lymph nodes corresponding to the alleged tattoo location. Finding the characteristic ink pigment within these nodes can serve as a definitive method of identification, confirming the presence of a tattoo even when it is no longer visible on the skin surface.

Question 52. What is true about the hymen in cases of child rape?

A. Hymen easily tears because it is thin

B. Hymen easily tears because it is in the front

C. Hymen hardly tears because it is highly elastic

D. Hymen hardly tears because it is situated deep

Correct answer: C

A common misconception is that the hymen will always tear during sexual penetration. However, in prepubertal children, the hymen is typically highly elastic and redundant. It is rich in estrogen receptors, and in the low-estrogen prepubertal state, it is often thicker and more flexible compared to the hymen of an adolescent or adult. Because of this high elasticity, the

Question 53. Punishment of perjury comes under IPC section?

A. IPC 191

B. IPC 192

C. IPC 193

D. IPC 197

Correct answer: C

In the Indian Penal Code (IPC), the concept of perjury is covered under several sections. Section 191 of the IPC defines the offense of giving false evidence, which is knowingly making a false statement under oath or by declaration. Section 192 defines the offense of fabricating false evidence. However, the punishment for both of these offenses is prescribed in Section 193 of the IPC. This section states : Whoever intentionally gives false evidence in any stage of a judicial proceeding, or fabricates false evidence for the purpose of being used in any stage of a judicial proceeding, shall be punished with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine... . Therefore, while Section 191 defines the act, Section 193 specifies the legal consequences or punishment for committing it.

Question 54. In cases of civil negligence filed against a doctor, who carries the burden of proof?

A. Judicial first-degree magistrate

B. Police not below the level of sub-inspector

C. Doctor

D. Patient

Correct answer: D

In cases of civil medical negligence, the legal principle of onus probandi, or the burden of proof, rests squarely on the claimant or plaintiff, which in this context is the patient (or their relatives). The patient who alleges negligence must prove their case to the court on a balance of probabilities. This involves establishing the four essential elements of negligence :1. Duty : That the doctor owed a duty of care to the patient.2. Dereliction : That the doctor breached this duty by failing to provide a standard of care

Question 55. Magnan's symptoms are related to which of the following?

A. Cocaine poisoning

B. Cannabis

C. Amphetamine

D. Alcohol

Correct answer: A

Magnan's sign or symptom is a specific type of tactile hallucination that is classically associated with chronic cocaine abuse. It is a form of formication, which is the sensation of insects crawling on or under the skin. Individuals experiencing this symptom may have a delusional belief that they are infested with parasites (delusional parasitosis). This can lead them to compulsively pick at, scratch, or excoriate their skin in an attempt to remove the imaginary cocaine bugs, resulting in characteristic skin lesions. While formication can occur with other stimulant abuse (like amphetamines) or in alcohol withdrawal, its specific association with the sensation of bugs crawling under the skin is classically known as Magnan's sign of cocaine toxicity.

Question 56. In a suspected case of child sexual assault presenting with anal pain, a test produces yellow iodine crystals with picric acid. What is the name of this test?

A. Florence test

B. Barberio's test

C. Acid phosphatase test

D. Creatine Phosphokinase

Correct answer: B

The question contains a slight error in its description. The Barberio's test is a presumptive

Question 57. According to the Mental Health Care Act, what is the maximum duration for which a magistrate can order the detention of a person with mental illness for assessment?

A. 30 days

B. 90 days

C. 50 days

D. 10 days

Correct answer: A

According to the Mental Healthcare Act, 2017, a magistrate has the authority to order the detention of a person with suspected mental illness for assessment when it appears that the individual may require care and treatment but is unable or unwilling to seek help voluntarily.Under this Act, the magistrate can direct that the person be taken to a mental health establishment for examination and assessment by a mental health professional. The purpose of this detention is to determine the person’s mental condition and whether admission for treatment is necessary.The maximum period of detention for assessment is 30 days. During this time, qualified professionals evaluate the patient’s mental state, risk to self or others, and need for further treatment or admission under appropriate legal provisions.This provision ensures that individuals with suspected mental illness receive timely evaluation while also protecting their legal

Question 58. What is the mechanism by which bacteria develop resistance to penicillins through beta-lactamase production?

A. Altered penicillin-binding proteins

B. Drug efflux

C. Breaks drug structure

D. Alteration in 50S ribosome structure

Correct answer: C

The most common mechanism of bacterial resistance to penicillin and other beta-lactam antibiotics is the production of beta-lactamase enzymes. These enzymes confer resistance by directly inactivating the antibiotic. The beta-lactam ring is the core chemical structure of all penicillin-class antibiotics and is essential for their antibacterial activity. Beta-lactamase enzymes are hydrolases that specifically target and cleave the amide bond within this beta-lactam ring. This enzymatic cleavage breaks the drug's structure, opening the ring and rendering the antibiotic molecule completely inactive and unable to bind to its target, the penicillin-binding proteins (PBPs) in the bacterial cell wall. Altered PBPs (A) is another important resistance mechanism (seen in MRSA), but it is distinct from the action of beta-lactamase. Drug efflux (B) and ribosomal alteration (D) are mechanisms of resistance to other classes of antibiotics.

Question 59. A patient receiving lithium therapy develops hypertension and is started on a thiazide diuretic. After a few days, signs of lithium toxicity such as coarse tremors appear. What is the most likely mechanism behind this drug interaction?

A. Thiazide increases the tubular reabsorption of lithium

B. Thiazide inhibits the metabolism of lithium

C. Thiazides act as an add-on drug to lithium

D. All of the above

Correct answer: A

No explanation is available for this recall question yet.

Question 60. Which of the following hormones acts via a tyrosine kinase receptor?

A. Insulin

B. Thyroid-Stimulating Hormone (TSH)

C. Luteinizing Hormone (LH)

D. Melanocyte-Stimulating Hormone (MSH)

Correct answer: A

Insulin is the classic example of a hormone that acts via a receptor with intrinsic tyrosine kinase activity. The insulin receptor is a transmembrane protein that, upon binding to insulin, undergoes a conformational change that activates its own intracellular tyrosine kinase domain. This activation leads to auto phosphorylation of the receptor itself on specific tyrosine residues. The phosphorylated receptor then acts as a docking site and phosphorylates other intracellular substrate proteins, such as Insulin Receptor Substrate (IRS). This initiates a complex downstream signaling cascade that ultimately mediates the diverse metabolic effects of insulin, such as glucose uptake into cells. In contrast, TSH, LH, and MSH are all peptide hormones that bind to G-protein coupled receptors (GPCRs), which exert their effects through second messenger systems like cyclic AMP, not through a tyrosine kinase receptor.

Question 61. Which of the following is not a prokinetic agent?

A. Dopamine antagonist

B. 5HT4 agonist

C. Macrolides

D. Diphenylmethane

Correct answer: D

Prokinetic agents are drugs that enhance and coordinate gastrointestinal motility, primarily in the upper GI tract, to facilitate the transit of contents. Several classes of drugs have this effect. Dopamine D2 receptor antagonists like metoclopramide and domperidone are prokinetic because they block the inhibitory effect of dopamine on cholinergic stimulation of the gut. 5HT4 receptor agonists like prucalopride and cisapride stimulate serotonin receptors on enteric neurons, which promotes the release of acetylcholine and enhances peristalsis. Macrolide antibiotics like erythromycin act as agonists at motilin receptors, powerfully stimulating gastric emptying and upper intestinal contractions. In contrast, diphenylmethane derivatives are not considered prokinetic agents. This chemical class includes stimulant laxatives such as bisacodyl. While they do increase gut motility, their primary mechanism involves direct irritation of the colonic mucosa to induce peristalsis, rather than coordinating motility in the

upper GI tract. Their action is more cathartic than truly prokinetic.

Question 62. Which of the following drugs acts by inhibiting DNA replication?

A. 6-Mercaptopurine

B. Actinomycin D

C. Mitomycin C

D. Asparaginase

Correct answer: C

Mitomycin C is an antitumor antibiotic that acts as an alkylating agent. After being metabolically activated, it forms covalent cross-links with DNA, typically between two guanine bases. This cross-linking prevents the separation of the two DNA strands, which is a necessary step for both DNA replication and transcription. By physically inhibiting the unwinding of the DNA helix, Mitomycin C effectively halts DNA replication and cell division, leading to apoptosis. 6-Mercaptopurine (A) is an antimetabolite that inhibits purine synthesis. Actinomycin D (B) is an intercalating agent that primarily inhibits

Question 63. Which antimicrobial drug should be avoided in a chronic asthmatic patient who is receiving theophylline therapy?

A. Erythromycin

B. Amoxicillin

C. Cefotaxime

D. Cotrimoxazole

Correct answer: A

Theophylline has a very narrow therapeutic index, meaning the difference between a therapeutic dose and a toxic dose is small. Its metabolism is highly dependent on the cytochrome P450 enzyme system in the liver, particularly the CYP1A2 and CYP3A4 isoenzymes. Several drugs can inhibit these enzymes, leading to decreased clearance of theophylline and a sharp rise in its serum levels, which can cause life-threatening toxicity (e.g., seizures, arrhythmias). Erythromycin, a macrolide antibiotic, is a well-known and potent inhibitor of the CYP3A4 enzyme. Co-administration of erythromycin with theophylline can significantly impair theophylline's metabolism, leading to a dangerous accumulation of the drug. Therefore, macrolides like erythromycin (and clarithromycin) as well as fluoroquinolones like ciprofloxacin should be avoided or used with extreme caution and close monitoring in patients on theophylline therapy. The other antibiotics listed do not have this significant interaction.

Question 64. Which of the following is the drug of choice (DOC) for prophylaxis of motion sickness?

A. Promethazine

B. Prochlorperazine

C. Metoclopramide

D. Itopride

Correct answer: A

Motion sickness is caused by a conflict between sensory inputs from the visual system and the vestibular system in the inner ear. The most effective drugs for the prophylaxis (prevention) of motion sickness are agents that act on the vestibular nuclei and the vomiting center in the brainstem. The two main classes are anticholinergics (like scopolamine/hyoscine) and first-generation H1 antihistamines with strong anticholinergic properties. Promethazine is a first-generation antihistamine with potent antimuscarinic and sedative effects. It is highly effective in preventing the nausea and vomiting associated with motion sickness and is considered a drug of choice for this indication. For maximal effect, it should be taken 1-2 hours before travel begins. Prochlorperazine (B) and metoclopramide (C) are dopamine antagonists that are more effective for nausea from other causes and are less effective for motion sickness.

Question 65. Which antihypertensive medication should be avoided in patients who have elevated serum uric acid levels?

A. Hydrochlorothiazide

B. Enalapril

C. Prazosin

D. Atenolol

Correct answer: A

Thiazide diuretics, such as hydrochlorothiazide, are a common first-line treatment for hypertension. However, a well-known metabolic side effect is hyperuricemia (an increase in serum uric acid levels). Thiazides increase uric acid levels by competing with urate for secretion at the organic acid transporter in the proximal renal tubules. This reduced renal excretion leads to an accumulation of uric acid in the blood. In susceptible individuals, this can precipitate an acute attack of gout. Therefore, thiazide diuretics should be avoided or used with caution in patients with a history of gout or pre-existing hyperuricemia. In contrast, some other antihypertensives, such as the ARB losartan, have a mild uricosuric effect and can actually

Question 66. Which drug is considered the treatment of choice for invasive aspergillosis?

A. Posaconazole

B. Voriconazole

C. Liposomal Amphotericin B (AMB)

D. Caspofungin

Correct answer: B

Invasive aspergillosis is a life-threatening fungal infection that most commonly affects immuno compromised patients. Based on numerous clinical trials and established treatment guidelines,

the drug of choice for the primary treatment of invasive aspergillosis is voriconazole. Voriconazole is a broad-spectrum triazole antifungal that has demonstrated superior efficacy and improved survival rates compared to the previous standard of care, conventional amphotericin B. It is available in both intravenous and oral formulations, allowing for step-down therapy. While Liposomal Amphotericin B (L-AMB) is a valid and important alternative, especially for patients who cannot tolerate or do not respond to voriconazole, voriconazole is recommended as the first-line agent. Posaconazole is used more for prophylaxis, and caspofungin is typically reserved for salvage therapy.

Question 67. Which of the following drugs works by blocking the transcription of DNA into RNA?

A. Rifampicin

B. Nitrofurantoin

C. Ciprofloxacin

D. Novobiocin

Correct answer: A

Rifampicin is a bactericidal antibiotic that acts by specifically inhibiting bacterial DNA-dependent RNA polymerase. This enzyme is responsible for the process of transcription, which is the synthesis of RNA from a DNA template. By binding to the beta subunit of the bacterial RNA polymerase, rifampicin blocks the initiation of RNA synthesis, thereby preventing the production of messenger RNA and other essential RNA molecules. This halts protein synthesis and leads to bacterial death. Since the mammalian RNA polymerase has a different structure, rifampicin does not affect host cells. In contrast, ciprofloxacin (C) and novobiocin (D) inhibit DNA gyrase, an enzyme involved in DNA replication. Nitrofurantoin (B) has a complex mechanism involving the damage of bacterial DNA and ribosomal proteins.

Question 68. A patient started on fluphenazine develops tremors, rigidity, bradykinesia, and excessive salivation after a few weeks. What is the first-line treatment for this condition?

A. Selegiline

B. Trihexyphenidyl

C. Pramipexole

D. Amantadine

Correct answer: B

The patient has developed drug-induced parkinsonism, a common extrapyramidal side effect (EPS) of typical antipsychotics like fluphenazine. These drugs block dopamine D2 receptors in the nigrostriatal pathway of the brain, leading to a state of dopamine deficiency that mimics Parkinson's disease, with its characteristic symptoms of tremor, rigidity, and bradykinesia. The first-line management for drug-induced parkinsonism is an oral anticholinergic agent.

Trihexyphenidyl (also known as benzhexol) is a centrally acting anticholinergic drug that works by blocking muscarinic receptors in the striatum. This helps to restore the relative balance between the depleted dopamine and acetylcholine, thereby alleviating the parkinsonian symptoms, particularly the tremor and rigidity. Other anticholinergics like benztropine are also used.

Question 69. Pegloticase is indicated for the treatment of which condition?

A. Ankylosing spondylitis

B. Reactive Arthritis

C. Calcium Pyrophosphate Deposition Disease (CPPD)

D. Chronic tophaceous gout

Correct answer: D

Pegloticase is a recombinant form of the enzyme uricase (urate oxidase) that is covalently attached to polyethylene glycol (PEG) to prolong its half-life and reduce immunogenicity. Uricase is an enzyme that catalyzes the oxidation of uric acid into allantoin, a much more water-soluble compound that is easily excreted by the kidneys. Humans lack a functional uricase enzyme. Pegloticase is used for the treatment of severe, refractory chronic tophaceous gout. In these patients, who have failed or are intolerant to standard urate-lowering therapies like allopurinol, pegloticase provides a rapid and profound reduction in serum uric acid levels. This leads to the dissolution of tophi (large deposits of urate crystals) and control of gout flares. It is not used for other forms of arthritis.

Question 70. Which fluoroquinolone should be avoided in patients with liver disease?

A. Levofloxacin

B. Pefloxacin

C. Ofloxacin

D. Lomefloxacin

Correct answer: B

The pharmacokinetics of different fluoroquinolones vary, particularly their routes of elimination. Most fluoroquinolones, like levofloxacin and ofloxacin, are primarily eliminated unchanged by the kidneys, so their doses need to be adjusted in renal failure but not necessarily in liver disease. Pefloxacin, however, is unique in that it is extensively metabolized by the liver into several active and inactive metabolites. Its clearance is significantly reduced in patients with hepatic impairment. The accumulation of the parent drug and its metabolites can increase the risk of toxicity. Therefore, pefloxacin is generally

Question 71. At an altitude of 000 meters, a person experiences breathlessness. Which of the following should not be used in managing this condition?

A. Intravenous digoxin

B. Oxygen supplementation

C. Immediate descent

D. Acetazolamide

Correct answer: A

The breathlessness experienced at high altitude is a symptom of acute mountain sickness (AMS) or high-altitude pulmonary edema (HAPE), caused by hypoxia. The cornerstone of management is acclimatization and treating the underlying hypoxia. Immediate descent to a lower altitude is the most definitive and life-saving treatment. Oxygen supplementation directly addresses the hypoxia. Acetazolamide is the primary pharmacological agent used for both prevention and treatment of AMS; it is a carbonic anhydrase inhibitor that causes a metabolic acidosis, which stimulates respiration and improves acclimatization. Digoxin, on the other hand, is a cardiac glycoside used for heart failure and atrial fibrillation. It has no role in the management of high-altitude illness. In fact, by increasing myocardial oxygen demand, it could potentially be harmful in a hypoxic individual.

Question 72. A patient with diabetes and COPD develops postoperative urinary retention. Which drug can be used for short-term management to relieve this condition?

A. Bethanechol

B. Methacholine

C. Terazosin

D. Tamsulosin

Correct answer: A

The patient has developed acute urinary retention, likely due to a combination of factors including diabetic autonomic neuropathy and the effects of anesthesia. The goal of short-term pharmacologic treatment is to stimulate bladder

Question 73. A patient receives a muscle relaxant that competitively blocks nicotinic receptors. Which drug is used to reverse the muscle relaxation after surgery?

A. Neostigmine

B. Carbachol

C. Succinylcholine

D. Physostigmine

Correct answer: A

The muscle relaxant described is a non-depolarizing neuromuscular blocker (e.g., rocuronium, vecuronium), which acts as a competitive antagonist at the nicotinic acetylcholine receptors of the neuromuscular junction. To reverse this blockade at the end of surgery, the goal is to increase the amount of acetylcholine in the synaptic cleft to out-compete the antagonist. This is achieved by administering an acetylcholinesterase inhibitor. Neostigmine is the most commonly

used agent for this purpose. It inhibits the enzyme acetylcholinesterase, preventing the breakdown of acetylcholine and thereby increasing its concentration at the neuromuscular junction. This increased acetylcholine displaces the blocker from the receptors, restoring neuromuscular transmission. Neostigmine is typically co-administered with an antimuscarinic agent like glycopyrrolate or atropine to block its unwanted muscarinic side effects (e.g., bradycardia).

Question 74. Zero-order (saturation) kinetics is independent of which of the following factors?

A. Plasma concentration

B. Clearance

C. Volume of distribution

D. Half life

Correct answer: A

Drug elimination can follow either first-order or zero-order kinetics. In zero-order kinetics, the rate of elimination is constant and is independent of the drug's plasma concentration. This occurs when the metabolic or elimination pathways are saturated. A constant amount

Question 75. Which anticancer drugs function as competitive inhibitors of tyrosine kinase?

A. Imatinib and Sunitinib

B. Letrozole

C. Bicalutamide

D. Fulvestrant

Correct answer: A

Imatinib and Sunitinib are classic examples of small-molecule tyrosine kinase inhibitors (TKIs), a major class of targeted cancer therapy. These drugs are designed to enter the cell and act as competitive inhibitors at the ATP-binding site of specific, often oncogenic, tyrosine kinase enzymes. By blocking the binding of ATP, they prevent the phosphorylation and activation of downstream signaling pathways that drive cancer cell proliferation and survival. Imatinib is highly specific for the BCR-ABL kinase in chronic myeloid leukemia (CML). Sunitinib is a multi-targeted TKI used for renal cell carcinoma and gastrointestinal stromal tumors. The other drugs listed are all forms of endocrine therapy : letrozole is an aromatase inhibitor, bicalutamide is an anti-androgen, and fulvestrant is an estrogen receptor antagonist.

Question 76. By what mechanism does Theophylline cause diuresis?

A. PDE3 inhibition

B. PDE4 inhibition

C. Beta-2 agonist action

D. Adenosine A1 receptor antagonism

Correct answer: D

Theophylline, a methylxanthine, is primarily used as a bronchodilator for asthma and COPD. One of its well-known side effects is a mild diuretic action. While theophylline is a non-selective phosphodiesterase (PDE) inhibitor, its diuretic effect is not primarily mediated by this action. The main mechanism behind its diuretic property is the antagonism of adenosine A1 receptors in the kidneys. Adenosine, acting on A1 receptors in the afferent arterioles of the glomerulus, causes vasoconstriction and a decrease in the glomerular filtration rate (GFR). By blocking these receptors, theophylline opposes the action of adenosine, leading to afferent arteriole vasodilation, an increase in renal blood flow and GFR, and consequently, an increase in urine output (diuresis). It also inhibits sodium reabsorption in the proximal tubules, further contributing to the diuretic effect. PDE inhibition contributes more to its bronchodilator and cardiac effects.

Question 77. Which drug is considered the treatment of choice for onychomycosis?

A. Terbinafine

B. Fluconazole

C. Nystatin

D. Itraconazole

Correct answer: A

Onychomycosis, a fungal infection of the nails, is most commonly caused by dermatophytes like Trichophyton rubrum. The treatment of choice for dermatophyte onychomycosis is oral terbinafine. Terbinafine is an allylamine antifungal that acts by inhibiting the enzyme squalene epoxidase, a key step in the synthesis of ergosterol, which is an essential component of the fungal cell membrane. This action is fungicidal. Terbinafine is highly effective, achieves high concentrations in the nail plate,

Question 78. What is the vector for the Zika virus?

A. Aedes

B. Culex

C. Anopheles

D. None of these

Correct answer: A

No explanation is available for this recall question yet.

Question 79. Which of the following statements about Japanese encephalitis is not correct?

A. Caused by flavivirus

B. Humans are dead-end hosts

C. Transmitted by culex

D. Cattles are amplifier hosts

Correct answer: D

The statement that cattle are amplifier hosts is not true. Japanese Encephalitis (JE) is a zoonotic disease caused by a flavivirus (A is true). Its natural transmission cycle involves mosquitoes and vertebrate hosts. The primary mosquito vectors are from the genus Culex, especially Culex tritaeniorhynchus (C is true). The main amplifier hosts in this cycle are pigs and certain species of wading birds (like herons and egrets). An amplifier host is one in which the virus replicates to high titers, producing a prolonged and high-level viremia that is sufficient to infect feeding mosquitoes, thus amplifying the transmission cycle. While cattle can be infected by the virus, they develop a very low and transient viremia and are therefore not efficient at transmitting the virus back to mosquitoes. They are considered poor amplifiers or dead-end hosts, much like humans (B is true).

Question 80. Which of the following does not possess superantigen activity?

A. Vibrio cholera

B. Streptococcal pyrogenic

C. Staphylococcal enterotoxins

D. None of these

Correct answer: A

Superantigens are a class of microbial toxins that can trigger an excessive and non-specific activation of T-cells. They bypass the normal antigen presentation process and directly cross-link T-cell receptors (TCRs) with MHC class II molecules on antigen-presenting cells. This leads to a massive polyclonal T-cell proliferation and a cytokine storm, which can result in life-threatening conditions like toxic shock syndrome. Well-known examples of superantigens include the staphylococcal enterotoxins (which cause food poisoning and toxic shock syndrome) and the streptococcal pyrogenic exotoxins (responsible for toxic shock-like syndrome and the rash of scarlet fever). The primary virulence factor of Vibrio cholerae is the cholera toxin, which is an A-B type enterotoxin that acts by ADP-ribosylating a G-protein, leading to massive fluid secretion in the gut. It does not have superantigen properties.

Question 81. Which of the following is categorized as a Type A bioterrorism agent?

A. Chikungunya

B. Anthrax

C. Hendra

D. Influenza

Correct answer: B

The Centers for Disease Control and Prevention (CDC) classifies biological agents with the potential for use in terrorism into three categories (A, B, and C) based on their risk to national

security. Category A agents are the highest priority. These are organisms that can be easily disseminated or transmitted from person to person, result in high mortality rates, have the potential for major public health impact, might cause public panic and social disruption, and require special action for public health preparedness. The classic Category A agents include Bacillus anthracis (the cause of anthrax), Clostridium botulinum toxin (botulism), Yersinia pestis (plague), variola major (smallpox), Francisella tularensis

Question 82. Which culture media is used for E. coli 0157?

A. SMAC

B. Wilson and Blair medium

C. Potassium tellurite in Mcleod's medium

D. Deoxycholate citrate agar (DCA)

Correct answer: A

Escherichia coli O157 :H7 is a significant serotype of enterohemorrhagic E. coli (EHEC)

Question 83. Which organism is responsible for causing lymphogranuloma venereum (LGV)?

A. Chlamydia trachoma tis

B. Neisseria gonorrhoea

C. Treponema palladium

D. Hemophilus ducreyi

Correct answer: A

Chlamydia trachomatisLymphogranuloma Venereum (LGV) is a sexually transmitted infection that is caused by specific, more invasive serovars of Chlamydia trachomatis, specifically serovars L1, L2, and L3. This is distinct from the other serovars (D-K) of C. trachomatis that cause the more common non-gonococcal urethritis and cervicitis. LGV typically presents in three stages. The primary stage involves a small, painless, transient genital ulcer that often goes unnoticed. The secondary stage, which is the most common presentation, involves the spread of the infection to the regional lymph nodes, causing tender, suppurative lymphadenopathy (buboes), often with the characteristic groove sign. If left untreated, it can progress to a tertiary stage with chronic inflammation, fibrosis, strictures, and lymphedema (elephantiasis).

Question 84. Which interleukin stimulates B cells to produce IgE?

A. IL 1

B. IL 3

C. IL 4

D. Both B & C

Correct answer: C

The process of isotype switching in B-lymphocytes, where they switch from

Question 85. Nosocomial infections are defined as infections that develop after how many hours of hospital admission?

A. 48 hrs

B. 72 hrs

C. 24 hrs

D. 50 hrs

Correct answer: A

A nosocomial infection, also known as a hospital-acquired infection (HAI), is defined as an infection that is acquired in a hospital or other healthcare facility and was not present or incubating at the time of admission. To distinguish HAIs from community-acquired infections that may become apparent after admission, a standard time-based criterion is used. An infection is generally classified as nosocomial if it first appears 48 hours or more after hospital admission. This 48-hour window is considered sufficient time to exclude infections that were incubating upon arrival. The definition also includes infections that appear after discharge if they are related to the hospitalization or a procedure performed during the stay, as well as occupational infections among healthcare staff.

Question 86. Which of the following is not implicated in causing urethritis?

A. Trichomonas

B. H.ducreyi

C. Chlamydia

D. Gonococcus

Correct answer: B

Urethritis, or inflammation of the urethra, is a common sexually transmitted syndrome characterized by urethral discharge and dysuria. The most common causative agents are Neisseria gonorrhoeae (Gonococcus) and Chlamydia trachomatis. These two organisms account for the vast majority of cases. Other, less common causes of non-gonococcal urethritis include Mycoplasma genitalium and the protozoan Trichomonas vaginalis. In contrast, Hemophilus ducreyi is the bacterium responsible for causing chancroid, a sexually transmitted infection that is characterized by the formation of painful genital ulcers and tender, suppurative inguinal lymphadenopathy (buboes). It is a cause of genital ulcer disease, not primarily urethritis. Therefore, H. ducreyi is the organism that is not typically involved in causing urethritis.

Question 87. Which cellular component of Neisseria gonorrhoeae is responsible for its attachment to host cells?

A. Lipooligosaccharide

B. Pili (fimbriae)

C. IgA1 protease

D. Outer membrane porin protein

Correct answer: B

A critical first step in the pathogenesis of infection by Neisseria gonorrhoeae is its attachment to the mucosal epithelial cells of the urogenital tract, pharynx, or rectum. This initial adherence is primarily mediated by hair-like appendages on the bacterial surface called pili (also known as fimbriae). The protein subunit of the pilus, called pilin, binds to specific receptors (such as CD46) on the host cell surface. This attachment allows the gonococci to resist being washed away by urine or mucosal secretions and establishes a foothold for subsequent invasion and infection. Pili are also crucial for twitching motility and genetic exchange. The ability of N. gonorrhoeae to undergo antigenic variation of its pilin protein helps it evade the

Question 88. Donovanosis is caused by which organism?

A. H. ducreyi

B. Leishmania donovani

C. K. granulomatis

D. Treponema pallidum.

Correct answer: C

Donovanosis, also known as granuloma inguinale, is a chronic, progressive ulcerative sexually transmitted infection. The causative agent is Klebsiella granulomatis (formerly known as Calymmatobacterium granulomatis). This is a Gram-negative intracellular bacterium. The diagnosis is typically made by microscopic examination of a crush preparation or biopsy from the lesion, stained with Giemsa or Wright stain. The pathognomonic finding is the presence of Donovan bodies, which are clusters of the small, encapsulated bacterial coccobacilli seen within the cytoplasm of large mononuclear cells (macrophages). The disease presents as painless, beefy-red, friable ulcers that progressively expand. H. ducreyi (A) causes chancroid, L. donovani (B) causes leishmaniasis, and T. pallidum (D) causes syphilis.

Question 89. Which fungal infection is transmitted through traumatic implantation into the skin?

A. Sporothrix

B. Blastomycosis

C. Coccidioides

D. Paracoccidioides

Correct answer: A

Sporotrichosis, caused by the dimorphic fungus Sporothrix schenckii, is the classic example of a fungal infection acquired via traumatic inoculation. This fungus lives in soil, sphagnum moss, and on plants. The infection typically occurs when the contaminated plant material (like a rose thorn, hence the name rose gardener's disease) causes a small cut or puncture wound

Question 90. Which form of retinal detachment is identified by positional shifting of subretinal fluid?

A. Exudative Retinal Detachment

B. Tractional Retinal Detachment

C. Rhegmatogenous Retinal Detachment

D. Retinodialysis

Correct answer: A

Exudative (or serous) retinal detachment is a type of retinal detachment that occurs without a retinal break or tear. Instead, it is caused by

Question 91. Conjunctival and pharyngeal congestion, a polymorphic rash, and cervical lymphadenopathy are features seen in which condition?

A. Kawasaki syndrome

B. Measles

C. Thrombocytopenia

D. Mumps

Correct answer: A

This constellation of symptoms represents several of the principal clinical criteria for the diagnosis of Kawasaki disease. Kawasaki disease is an acute, febrile vasculitis of childhood that primarily affects medium-sized arteries, most notably the coronary arteries. The diagnosis is made based on the presence of fever for at least five days plus at least four of the following five criteria :1. Bilateral, non-exudative conjunctival injection (red eyes).2. Changes in the oral mucosa, including injected or fissured lips, a strawberry tongue, or diffuse pharyngeal injection.3. A polymorphic rash on the trunk and extremities.4. Changes in the extremities (erythema/edema of hands/feet, or periungual desquamation).5. Acute, non-suppurative cervical lymphadenopathy (usually unilateral).

Question 92. Incongruous homonymous hemianopia accompanied by Wernicke’s hemianopic pupil indicates a lesion in which anatomical structure?

A. Optic radiation

B. Lateral geniculate body

C. Optic tract

D. Anterior occipital cortex

Correct answer: C

A lesion of the optic tract produces a contralateral homonymous hemianopia. Because the fibers from corresponding retinal points are not yet perfectly aligned in the optic tract, the visual field defects in each eye are typically incongruous (not identical in shape and size). Furthermore, the optic tract contains pupillary afferent fibers that are traveling towards the pretectal nucleus. A lesion in the optic tract will interrupt these fibers. This can be detected by

the Wernicke's hemianopic pupil sign : when a slit of light is shone on the blind half of the retina, the pupil does not constrict, but when it is shone on the seeing half, the pupillary light reflex is normal. This sign specifically localizes the lesion to a pre-geniculate level, i.e., the optic tract. Lesions in the optic radiation or cortex are post-geniculate; they cause congruous hemianopias and do not affect the pupillary light reflex.

Question 93. A patient presents with proptosis and restricted eye movements while having normal thyroid function. What is the most likely diagnosis?

A. Orbital Cellulitis

B. Orbital Lymphoma

C. Orbital Pseudotumor

D. Thyroid Ophthalmopathy

Correct answer: C

This patient presents with signs of an orbital inflammatory process : proptosis and restricted eye movements (ophthalmoplegia), which are often painful. While these are also the cardinal signs of thyroid-associated ophthalmopathy (TAO), the patient is clinically and biochemically euthyroid (has normal thyroid function). This makes TAO less likely, although it can occur in euthyroid patients. Orbital pseudotumor, now known as idiopathic orbital inflammatory disease, is a diagnosis of exclusion that perfectly fits this clinical picture. It is a non-neoplastic, non-infectious inflammatory condition of the orbit that mimics an orbital tumor or infection.

Question 94. What condition must be present for sympathetic ophthalmia to develop?

A. Penetrating injury to the eye

B. Blunt ocular trauma

C. Chemical injury

D. Urinary tract infection

Correct answer: A

Sympathetic ophthalmia is a rare, devastating, bilateral granulomatous panuveitis that occurs after trauma to one eye. The essential prerequisite for this condition is a penetrating (or perforating) injury to one eye, which is then called the exciting eye. The injury exposes intraocular antigens (such as retinal S-antigen) to the systemic immune system, which are normally sequestered and recognized as self. This breaks immune tolerance and triggers a delayed-type (Type IV) hypersensitivity reaction. This autoimmune response then attacks not only the injured eye but also the uninjured, contralateral sympathizing eye, leading to bilateral severe inflammation and potential blindness. The condition almost never occurs after blunt trauma or chemical injury unless there is an associated globe rupture. Prompt enucleation (removal) of a severely injured, blind eye can prevent the development of sympathetic ophthalmia.

Question 95. The photostress test helps distinguish between which of the following conditions?

A. Lens and cornea

B. Macula and optic nerve diseases

C. Cataract and glaucoma

D. Retinal and vitreous diseases

Correct answer: B

The photostress recovery test is a simple clinical test used to differentiate between vision loss caused by macular disease and vision loss caused by optic nerve disease. The test involves first measuring the patient's best-corrected visual acuity in the affected eye. Then, a bright light

Question 96. Which corneal layer is responsible for maintaining hydration of the corneal stroma?

A. Endothelium

B. Epithelium

C. Descemet membrane

D. Stroma

Correct answer: A

The corneal stroma has a natural tendency to absorb fluid from the aqueous humor and swell, which would cause it to become hazy and lose its transparency. The maintenance of a relatively dehydrated state (deturgescence), which is essential for corneal clarity, is primarily the function of the corneal endothelium. The endothelium is a single layer of hexagonal cells lining the posterior surface of the cornea. These cells contain a high density of active Na+/K+-ATPase pumps. This metabolic pump actively transports ions out of the stroma and back into the aqueous humor. This creates an osmotic gradient that continuously draws excess fluid out of the stroma, counteracting its tendency to swell. Damage or dysfunction of the endothelium (e.g., in Fuchs' dystrophy or after eye surgery) leads to a failure of this pump function, resulting in corneal edema and loss of vision.

Question 97. A 5-year-old man with hypertension and diabetes presents with diplopia and squint. On examination, the secondary deviation is greater than the primary deviation. What is the most likely diagnosis?

A. Concomitant squint

B. Paralytic squint

C. Restrictive squint MEDINK CHAPTER 08_OPHTHALMOLOGY

D. Pseudo squint

Correct answer: B

The key finding here is that the secondary deviation is greater than the primary deviation. This is the defining characteristic of an incompetent strabismus, specifically a paralytic squint.

Primary deviation is the angle of misalignment when the normal, unaffected eye is used for fixation. Secondary deviation is the angle of misalignment when the patient is forced to fixate with the paretic (paralyzed) eye.According to Hering's law of equal innervation, equal and simultaneous innervation flows to yoke muscles (muscles that work together to move the eyes in the same direction). When the patient fixates with the paretic eye, the brain sends an excessive amount of innervation to try and move the weak muscle. This same excessive innervation also goes to the contralateral yoke muscle in the normal eye, causing it to over-act, resulting in a much larger angle of deviation. This finding, along with the acute onset of diplopia in an elderly patient with vascular risk factors (hypertension, diabetes), strongly suggests a microvascular cranial nerve palsy causing a paralytic squint.

Question 98. Esotropia is most commonly associated with which type of refractive error?

A. Myopia

B. Hypermetropia

C. Emmetropia

D. Astigmatism

Correct answer: B

Esotropia is a type of strabismus where one or both eyes turn inward, toward the nose. There is a strong association between accommodative esotropia and hypermetropia (farsightedness). This relationship is based on the synkinesis (linked movement) between accommodation and convergence. A hypermetropic eye must accommodate (increase the focusing power of its lens) to see clearly, both at distance and especially at near. This effort of accommodation is reflexively linked to an effort of convergence (turning the eyes inward). In a child with a significant amount of uncorrected

Question 99. What is the term used for an additional row of eyelashes located posterior to the grey line?

A. Distichiasis

B. Tylosis

C. Madarosis

D. Trichiasis

Correct answer: A

Distichiasis is a rare congenital or acquired anomaly of the eyelid characterized by the presence of a partial or complete second row of eyelashes. This accessory row arises from the orifices of the meibomian glands, which are located on the eyelid margin posterior to the normal lash line. These aberrant lashes are often thinner and less pigmented than normal eyelashes, but because they are directed posteriorly, they can rub against the cornea and conjunctiva, causing chronic irritation, tearing, foreign body sensation, and even corneal abrasions. In contrast,

trichiasis (D) refers to the misdirection of normal eyelashes, which grow inward toward the eyeball. Madarosis (C) is the loss of eyelashes, and tylosis (B) refers to thickening of the eyelid margins.

Question 100. A patient presents with one-sided proptosis along with bilateral sixth cranial (abducent) nerve palsy. What is the most likely diagnosis?

A. Cavernous sinus thrombosis

B. Orbital cellulitis

C. Orbital pseudo tumor

D. Orbital lymphoma

Correct answer: A

This combination of signs is highly suggestive of cavernous sinus thrombosis (CST). The cavernous sinuses are paired venous structures located on either side of the sella turcica, which contain several critical cranial nerves (III, IV, V1, V2, and VI) and the internal carotid artery. The abducens nerve (cranial nerve VI) has a unique

Question 101. What is the characteristic finding of fungal ulcers?

A. Satellite lesions

B. Dendritic ulcer

C. Ring abscess

D. White hypopyon

Correct answer: A

Fungal keratitis (a fungal corneal ulcer) has several clinical features that help to distinguish it from bacterial ulcers. One of the most characteristic findings is the presence of satellite lesions. The main ulcer typically has a feathery, indistinct border and a dry, raised appearance. In addition to this central infiltrate, smaller, discrete foci of inflammation can be seen in the surrounding stroma, separate from the primary lesion. These are the satellite lesions, and their presence is highly suggestive of a filamentous fungal infection (like Aspergillus or Fusarium), as the hyphae can grow and proliferate through the corneal stroma to create these separate foci. A thick, white hypopyon (D) and an endothelial plaque are also common. A dendritic ulcer (B) is pathognomonic for herpes simplex keratitis.

Question 102. Which drug, used in patients with raised intraocular pressure and optic disc changes, acts by increasing uveoscleral outflow?

A. Latanoprost

B. Pilocarpine

C. Dorzolamide

D. Timolol

Correct answer: A

The management of glaucoma (characterized by increased IOP and optic disc changes)

Question 103. A patient with rheumatoid arthritis has been receiving long-term treatment and develops blurred vision after two years. Examination reveals corneal opacity. Which drug is most likely responsible for this finding?

A. Sulfasalazine

B. Chloroquine

C. Methotrexate

D. Leflunomide

Correct answer: B

Several medications used to treat rheumatoid arthritis can have ocular side effects. One of the most well-known toxicities is associated with the antimalarial drugs chloroquine and hydroxy chloroquine. While the most feared complication is an irreversible bull's-eye maculopathy, these drugs can also affect the cornea. A characteristic finding is cornea verticillata (also known as vortex keratopathy), which is the deposition of the drug in the corneal epithelium. This creates fine, greyish or golden-brown opacities that swirl outwards from a point below the pupil in a whorl-like pattern. While often asymptomatic, these corneal opacities can sometimes cause blurred vision, glare, and halos around lights. The development of corneal opacities in a patient on long-term treatment for RA is highly suggestive of chloroquine or hydroxy chloroquine keratoplasty.

Question 104. Which of the following statements correctly describes Nutcracker esophagus?

A. There is extremely forceful peristaltic activity leading to episodes of chest pain and dysphagia.

B. There is no medical treatment available.

C. It is a type of esophageal malignancy.

D. None

Correct answer: A

Nutcracker esophagus, also known as hypertensive peristalsis, is a motility disorder of the esophagus. It is defined by manometric findings of normal, coordinated peristalsis in the esophageal body, but with extremely high-amplitude or long-duration contractions. The peristaltic waves are normally sequenced but are simply too powerful. This hyper contractility is thought to be the cause of the primary symptoms, which are non-cardiac chest pain and dysphagia (difficulty swallowing). The diagnosis is made exclusively by high-resolution esophageal manometry, which will show distal contractile integral (DCI) values greater than 8,000 mmHg·s·cm. It is a benign motility disorder, not a malignancy (C is incorrect). Medical treatments, though often of limited efficacy, are available and include calcium

Question 105. A patient's arterial blood gas analysis shows a pH of 7.2, bicarbonate level of 10–12 mmol/L, and a pCO_2 of 35 mmHg. What is the most likely cause of this metabolic acidosis?

A. K+ excretion by the kidney

B. CO2 expiration by the lungs

C. H+ excretion by the kidney

D. $HCO3^-$ loss by the kidney

Correct answer: D

The patient has a metabolic acidosis, indicated by a low pH (7.2) and a low serum bicarbonate ($HCO3^-$) level (10-12 mmol/L). The pCO2 is at the lower end of normal, suggesting some respiratory compensation has begun. Metabolic acidosis can be broadly divided into two types based on the anion gap (AG = Na+ - (Cl^- + $HCO3^-$)). Normal anion gap metabolic acidosis (NAGMA) is caused by the loss of bicarbonate, which is replaced by chloride, keeping the gap normal. The two main causes of NAGMA are diarrhea (loss of bicarbonate from the gut) and renal tubular acidosis (RTA). In RTA, the kidneys fail to either reabsorb filtered bicarbonate (proximal RTA) or excrete hydrogen ions (distal RTA), leading to a net loss of bicarbonate from the body via the kidney. This would be a primary renal cause of the metabolic acidosis.

Question 106. Impaired aquaporin function leads to which of the following conditions?

A. Liddle syndrome

B. Nephrogenic Diabetes Insipidus (DI)

C. Cystic fibrosis

D. Bartter syndrome

Correct answer: B

No explanation is available for this recall question yet.

Question 107. What is the most serious complication of measles?

A. Croup

B. Meningo-encephalitis

C. Otitis media

D. Pneumonia

Correct answer: B

While pneumonia is the most common cause of death from measles and otitis media is the most frequent complication overall, the most serious and devastating complication is acute meningoencephalitis. This neurological complication occurs in approximately 1 in 1,000 cases of measles, typically appearing a few days after the onset of the rash. It can manifest with seizures, altered consciousness, and focal neurological deficits. The mortality rate from measles encephalitis is high (around 15%), and a significant proportion of survivors (25-40%) are left

with permanent neurological sequelae, including intellectual disability, seizure disorders, deafness, and motor impairments. Another even more devastating, though much rarer, neurological complication is Subacute Sclerosing Panencephalitis (SSPE), a progressive and universally fatal disease that develops years after the initial infection. Due to the high risk

Question 108. Water hammer pulse is classically observed in which of the following conditions?

A. Aortic regurgitation

B. Mitral stenosis

C. Aortic stenosis

D. Left ventricular failure

Correct answer: A

A water hammer pulse, also known as a collapsing pulse or Corrigan's pulse, is a classic physical sign of severe, chronic aortic regurgitation (AR). In AR, the incompetent aortic valve allows a significant volume of blood to leak back from the aorta into the left ventricle during diastole. This regurgitant fraction leads to a very large stroke volume being ejected during systole. The result is a wide pulse pressure (a large difference between systolic and diastolic blood pressure). This creates a characteristic pulse that has a very rapid, forceful upstroke followed by a sudden, precipitous collapse as blood runs off both peripherally and back into the ventricle. The sensation, best felt by palpating the radial artery with the patient's arm elevated, is likened to the historical water hammer toy, which had a similar sudden, forceful impact.

Question 109. You are posted at a Primary Health Center when a 3-year-old child is brought by the parents with a 5-day history of fever and cough. On examination, chest indrawing is observed. According to IMNCI classification, what is the most appropriate management?

A. Give antipyretics only

B. Give antibiotics and follow up

C. Refer urgently to tertiary care

D. Give antibiotics and refer to tertiary care

Correct answer: C

The Integrated Management of Neonatal and Childhood Illnesses (IMNCI) guidelines provide a systematic approach for classifying and managing common childhood illnesses at the primary care level. For a child with a cough or difficulty breathing, the presence of any general danger sign or specific signs of severe respiratory distress mandates an immediate and urgent referral to a higher-level facility. Chest indrawing (visible retraction of the lower chest wall during inspiration) is a key sign of increased work of breathing and is classified as a sign of Severe Pneumonia or Very Severe Disease. According to the IMNCI algorithm, any child with chest indrawing must be classified as having a severe condition. The correct management is to give

the first dose of an appropriate antibiotic and then refer urgently to a hospital or tertiary care center for inpatient management, including potential oxygen therapy and parenteral antibiotics.

Question 110. Which poison can still be detected in the skeleton even after emaciation?

A. Lead

B. Arsenic

C. Mercury

D. Cadmium

Correct answer: B

Many heavy metals can be detected in tissues long after death. However, arsenic has a particular affinity for binding to sulfhydryl groups in keratin, a protein that is abundant in tissues like hair, nails, and skin. In cases of chronic poisoning, arsenic is deposited in these keratin-rich tissues as they grow. Because hair and nails are highly resistant to decomposition,

Question 111. At what temperature should rewarming be performed in cases of frostbite?

A. 37°C

B. 42°C

C. 44°C

D. 46°C

Correct answer: B

.Standard medical protocol for frostbite is rapid rewarming of the affected area in a controlled water bath. The goal is to thaw the frozen tissue quickly without causing additional thermal injury.The recommended water temperature is between 37°C and 42°C (98.6°F to 107.6°F). This range is optimal because it's warm enough to restore circulation and thaw tissue efficiently, yet safely below the temperature that would burn the skin. Because the frostbitten area is numb, the individual cannot feel pain, making them highly susceptible to burns from water that is too hot.Temperatures like 44°C or 46°C are dangerously high and can cause severe burns, worsening the injury. Rewarming is typically continued for 15–30 minutes until the skin becomes red and soft. This process is often extremely painful as sensation returns, requiring medical supervision and pain management.

Question 112. Which of the following conditions is not associated with pituitary apoplexy?

A. Hyperthyroidism

B. Diabetes mellitus

C. Sickle cell anemia

D. Hypertension

Correct answer: A

Pituitary apoplexy is a rare but life-threatening medical emergency caused by either hemorrhage or infarction within a pituitary adenoma. This leads to a rapid enlargement of the tumor, causing a sudden onset of severe headache, visual disturbances (due to compression of the

Question 113. Loss of pain and temperature sensation on the same side of the face and the opposite side of the body occurs due to thrombosis of which artery?

A. Posterior Inferior Cerebellar Artery (PICA)

B. Posterior Cerebral Artery

C. Superior Cerebellar Artery

D. None of the above

Correct answer: A

This pattern of crossed sensory loss is the hallmark of Wallenberg syndrome, also known as the lateral medullary syndrome. This syndrome is caused by an infarct in the dorsolateral medulla of the brainstem. The artery most commonly occluded to cause this syndrome is the vertebral artery, followed by its branch, the Posterior Inferior Cerebellar Artery (PICA). The infarct damages several key structures in this region. Specifically, it affects the spinal trigeminal nucleus, which receives pain and temperature sensation from the ipsilateral face, causing loss of sensation there. It also damages the spinothalamic tract, which carries pain and temperature sensation from the contralateral side of the body, causing a loss of sensation on the opposite side. This crossed pattern is highly specific for a lesion in the lateral medulla.

Question 114. Which of the following findings is not seen in left ventricular failure (LVF)?

A. Lung oligemia

B. Kerley B lines

C. Rales

D. Pedal edema

Correct answer: A

No explanation is available for this recall question yet.

Question 115. What is the leading cause of mortality in children diagnosed with systemic lupus erythematosus (SLE)?

A. Lupus nephritis

B. Lupus cerebritis

C. Libman-Sacks endocarditis

D. Anemia and infections

Correct answer: A

Systemic Lupus Erythematosus (SLE) is a multisystem autoimmune disease that can have severe manifestations in children. While modern treatments have significantly improved survival, mortality is still a concern. The most common cause of death in children with SLE has historically been related to end-organ damage from the disease itself, and the most frequently and severely affected organ is the kidney. Lupus nephritis, which is the inflammation of the kidneys caused by the deposition of immune complexes, is a major cause of morbidity and mortality. It can progress to end-stage renal disease (ESRD), requiring dialysis or transplantation. While infections (D), often related to the immunosuppressive therapies used to treat SLE, have emerged as a leading cause of death in recent years, renal failure from uncontrolled lupus nephritis remains a primary and classic cause of mortality in this population. Lupus cerebritis (B) and cardiac complications (C) are also serious but are less common causes of death than renal disease.

Question 116. A patient with multiple gallstones has a dilated common bile duct measuring 8 mm and four stones within the CBD. What is the most appropriate treatment approach?

A. Cholecystectomy with choledocholithotomy at the same setting

B. Extracorporeal shock wave lithotripsy (ESWL)

C. Cholecystectomy and wait for Endoscopic Retrograde Contradistinguishing (ERCP)

D. All of the above

Correct answer: A

No explanation is available for this recall question yet.

Question 117. All-trans retinoic acid (ATRA) is used to treat a tumor associated with which specific genetic mutation?

A. BCR-ABL

B. PML-RARA

C. CMYC

D. CEBPA

Correct answer: B

All-trans retinoic acid (ATRA) is a highly specific and effective differentiation agent used as the cornerstone of treatment for Acute Promyelocytic Leukemia (APL), a subtype of AML. The pathognomonic genetic hallmark of APL is the chromosomal translocation t(15;17)(q22;q21). This translocation results in the fusion of the Promyelocytic Leukemia (PML) gene on chromosome 15 with the Retinoic Acid Receptor Alpha (RARA) gene on chromosome 17, creating the oncogenic fusion gene PML-RARA. The abnormal PML-RARA protein acts as a transcriptional repressor, blocking the normal differentiation of myeloid cells at the promyelocyte stage. ATRA works by binding to the RARA portion of this fusion protein, which overcomes the transcriptional block and induces the malignant promyelocytes to differentiate

into mature neutrophils. This targeted therapy has revolutionized the treatment of APL, transforming it into a highly curable disease.

Question 118. A patient presents with the following arterial blood gas (ABG) and electrolyte values :pH=7.24 pO2=80 mmHg, PaCO2=36 mmHg, $HCO3^{-}$=14 mmol/L, Na+=131 mmol/L, Cl^{-}=90 mmol/L, Base excess (BE)=-13, Glucose =135 mg/dL. What is the most likely acid-base disturbance?

A. Respiratory acidosis

B. Respiratory alkalosis

C. Metabolic acidosis

D. Metabolic alkalosis

Correct answer: C

To interpret the ABG, we follow a systematic approach :1. Check the pH : The pH is 7.24, which is less than the normal range (7.35-7.45). This indicates an acidosis.2. Check the PaCO2 : The PaCO2 is 36 mmHg, which is within the normal range (35-45 mmHg). This suggests the primary problem is not respiratory. The PaCO2 is slightly on the low side of normal, indicating some minor respiratory compensation may be starting.3. Check the $HCO3^{-}$: The bicarbonate level is 14 mmol/L, which is significantly lower than the normal range (22-28 mmol/L). A low bicarbonate level is the defining feature of a metabolic acidosis.The combination of a low pH and a low $HCO3^{-}$ confirms a primary metabolic acidosis. We can also calculate the anion gap : AG = Na+ - (Cl^{-} + $HCO3^{-}$) = 131 - (90 + 14) = 131 - 104 = 27. This is a high anion gap metabolic acidosis.

Question 119. A patient with pulmonary fibrosis requires treatment for an arrhythmia. Which antiarrhythmic drug should be avoided in this patient?

A. Amiodarone

B. Flecainide

C. IV Ibutilide

D. Lidocaine

Correct answer: A

Amiodarone is a highly effective Class III antiarrhythmic drug, but its use is limited by a wide range of potential toxicities, the most serious of which is pulmonary toxicity. Amiodarone-induced pulmonary toxicity (AIPT) can manifest in several ways, including chronic interstitial pneumonitis, organizing pneumonia, and acute respiratory distress syndrome. The process involves direct cellular toxicity and an inflammatory response that can lead to progressive pulmonary fibrosis. In a patient who already has pre-existing pulmonary

Question 120. A woman with bipolar disorder has been taking lithium for six months. After several days of fasting for religious reasons, she develops seizures, tremors,

confusion, and weakness. Which investigations should be performed to confirm the diagnosis?

A. Serum electrolytes

B. Serum lithium

C. ECG

D. MRI

Correct answer: B

The patient's symptoms of seizures, coarse tremors, and confusion are classic signs of lithium toxicity. Lithium has a very narrow therapeutic index, and its levels can be easily pushed into the toxic range. The history of prolonged fasting is a critical clue. Fasting leads to dehydration and sodium depletion. The kidneys handle lithium and sodium in a similar way; in a state of sodium depletion, the proximal tubules increase the reabsorption of sodium in an attempt to conserve it. This process also leads to a concomitant increase in the reabsorption of lithium, causing its serum levels to rise dangerously. Therefore, the single most important and immediate investigation to confirm the diagnosis is to measure the serum lithium level. While serum electrolytes are also important to assess for dehydration and other imbalances, the lithium level will be the definitive diagnostic test.

Question 121. Which electrolyte imbalance is commonly associated with lithium therapy?

A. Hypokalemia

B. Hyperkalemia

C. Hypocalcemia

D. Hypercalcemia

Correct answer: D

Long-term therapy with lithium is associated with several endocrine and electrolyte abnormalities. One well-recognized complication is its effect on calcium and parathyroid hormone (PTH) metabolism. Lithium can cause hyperparathyroidism, leading to hypercalcemia. It is thought to do this by altering the set point of the calcium-sensing receptors on the parathyroid glands, making them less sensitive to suppression by serum calcium. This leads to an inappropriate secretion of PTH, which in turn increases serum calcium levels through its actions on bone and the kidneys. The hypercalcemia is usually mild and asymptomatic, but it can be more significant and requires monitoring of serum calcium and PTH levels in patients on chronic lithium therapy. Lithium's primary effect on renal tubules can also cause nephrogenic diabetes insipidus, leading to hypermetropia, but hypercalcemia is the most specific electrolyte disturbance listed.

Question 122. A 50-year-old man presents with paresthesia, severe anemia (hemoglobin 6.8 g/dL), macrocytosis, and hyper segmented neutrophils on peripheral

smear. Endoscopy shows atrophic gastritis. What is the most likely diagnosis?

A. Folate deficiency

B. Vitamin B12 deficiency

C. Riboflavin deficiency

D. Iron deficiency

Correct answer: B

This patient has all the classic features of pernicious anemia, a condition caused by severe Vitamin B12 deficiency. The laboratory findings of severe anemia (Hb 6.8), macrocytosis, and hypersegmented neutrophils are hallmarks of megaloblastic anemia, which can be caused by either B12 or folate deficiency. However, the presence of neurological symptoms, such as paresthesia (numbness and tingling), is specific to Vitamin B12 deficiency and is caused by subacute combined degeneration of the spinal

Question 123. Pulmonary plethora is seen in all of the following conditions except :

A. Transposition of the Great Arteries (TGA)

B. Ebstein anomaly

C. Hypoplastic Left Heart Syndrome (HLHS)

D. Double Outlet Right Ventricle (DORV)

Correct answer: B

Pulmonary plethora refers to increased pulmonary blood flow, which appears on a chest X-ray as engorged pulmonary arteries and increased vascular markings. It is a feature of congenital heart defects that cause a left-to-right shunt or mixing of circulations that results in excess blood flowing to the lungs. Conditions like Transposition of the Great Arteries (TGA), Hypoplastic Left Heart Syndrome (HLHS), and Double Outlet Right Ventricle (DORV) all involve complex mixing of systemic and pulmonary venous returns, typically resulting in increased pulmonary blood flow and plethora. In contrast, Ebstein's anomaly is a malformation of the tricuspid valve where it is displaced downwards into the right ventricle. This leads to severe tricuspid regurgitation and a poorly functioning right ventricle. The result is a significant decrease in effective forward blood flow from the right heart into the pulmonary circulation. Therefore, the characteristic finding

Question 124. A 20-year-old man has had a wrist swelling for two years. Histopathology shows spindle-shaped cells with Verocay bodies. What is the most likely diagnosis?

A. Lipoma

B. Dermoid cyst

C. Neurofibroma

D. Schwannoma

Correct answer: D

The key to this diagnosis is the histopathological findings. A Schwannoma (also known as a neurilemmoma) is a benign peripheral nerve sheath tumor composed of Schwann cells. The microscopic appearance is classic and often biphasic. It consists of compact, cellular areas of spindle-shaped cells with palisading nuclei, which are organized into structures known as Verocay bodies. These are pathognomonic for schwannomas. A Verocay body consists of two parallel rows of palisading nuclei separated by an acellular, eosinophilic zone. The tumor also has less cellular, myxoid areas (Antoni B pattern). The patient's presentation of a slow-growing mass on the wrist is consistent with a peripheral nerve tumor. A neurofibroma (C) is also a nerve sheath tumor but is composed of a mixed population of cells (Schwann cells, fibroblasts, perineurial cells) and does not typically form Verocay bodies.

Question 125. A hemodynamically unstable patient presents with supraventricular tachycardia (SVT). What is the most appropriate immediate management?

A. IV Ibutilide

B. IV Diltiazem

C. Cardioversion

D. IV Beta-blockers

Correct answer: C

The management algorithm for supraventricular tachycardia (SVT) is dictated by the patient's hemodynamic stability. A patient is considered unstable if they exhibit signs of poor perfusion, such as hypotension, altered mental status, signs of shock, or acute heart failure. In any tachyrhythmia, the presence of hemodynamic

Question 126. A 42-year-old patient presents with features of obstructive jaundice, and laboratory tests reveal raised alkaline phosphatase, gamma-glutamyl transferase, and haptoglobin levels. What is the most likely underlying cause?

A. Alcohol

B. Lead

C. Chronic renal failure

D. None of the above

Correct answer: A

The patient presents with a cholestatic pattern of liver injury, indicated by the elevated alkaline phosphatase (ALP) and gamma-glutamyl transferase (GGT). A disproportionately high GGT compared to ALP is particularly suggestive of alcohol-related liver disease. Heavy alcohol consumption induces the GGT enzyme, often leading to marked elevations even in the early stages of alcoholic liver injury. Furthermore, alcohol can cause a spectrum of liver damage, from fatty liver to alcoholic hepatitis and cirrhosis, all of which can present with cholestasis and jaundice. The mention of elevated haptoglobin is unusual in this context as haptoglobin is typically decreased in hemolysis. However, GGT is an acute-phase reactant and can be elevated

in many liver conditions, but its significant elevation along with ALP strongly points towards alcohol as a primary cause. Lead poisoning causes a microcytic anemia, and chronic renal failure has a different biochemical profile.

Question 127. What feature best distinguishes irritable bowel syndrome (IBS) from organic gastrointestinal disease?

A. Diarrhea

B. Stool calprotectin

C. Abdominal pain

D. Mucus in stools

Correct answer: B

Irritable Bowel Syndrome (IBS) is a functional gastrointestinal disorder, meaning it is characterized by symptoms without any visible or structural organic disease. Its symptoms, such as abdominal pain, diarrhea, and mucus in the stools, can significantly overlap with those of organic diseases like Inflammatory Bowel Disease (IBD - Crohn's disease and ulcerative colitis). A key challenge is to differentiate between these conditions. Fecal calprotectin is an excellent non-invasive biomarker for this purpose. Calprotectin is a protein released by neutrophils. Its presence in the stool indicates neutrophilic inflammation in the intestinal mucosa. In organic inflammatory diseases like IBD, there is significant inflammation, leading to a high fecal calprotectin level. In contrast, IBS is a non-inflammatory condition, so the fecal calprotectin level will be normal. This makes it a highly useful test to differentiate the functional symptoms of IBS from the inflammatory symptoms of organic GI disease.

Question 128. A patient presents with fatigue, a warm body, and absence of weight gain. What pattern of investigation findings is most likely in this case?

A. Low TSH with more T3 or T4

B. High TSH with normal T3 or T4

C. High TSH with euthyroid

D. Increased uptake of T3, but decreased T4

Correct answer: A

The patient's symptoms of fatigue (which can be seen in both hyper- and hypothyroidism), a feeling of being warm (heat intolerance), and a lack of weight gain (or weight loss despite a good appetite) are classic clinical features of hyperthyroidism. Hyperthyroidism is a state of excess thyroid hormone. The most common cause is primary hyperthyroidism (e.g., Graves' disease or a toxic nodule), where the thyroid gland itself is overproducing thyroid hormones (T3 and T4). These high levels of circulating T3 and T4 exert negative feedback on the pituitary gland, suppressing the secretion of Thyroid-Stimulating Hormone (TSH). Therefore, the

Question 129. Which condition is most commonly associated with the sudden onset

of severe headache along with neck stiffness?

A. Intra parenchymal hemorrhage

B. Subarachnoid hemorrhage (SAH)

C. Meningitis

D. None of the above

Correct answer: B

The combination of a sudden, explosive onset of a severe headache (often described as the worst headache of my life or a thunderclap headache) and signs of meningeal irritation, such as neck rigidity (nuchal rigidity), is the classic presentation of a subarachnoid hemorrhage (SAH). An SAH is most commonly caused by the rupture of an intracranial saccular (berry) aneurysm, which releases arterial blood directly into the subarachnoid space surrounding the brain. This blood irritates the meninges, leading to the nuchal rigidity, photophobia, and vomiting. While bacterial meningitis (C) also causes headache and neck rigidity, the onset is typically more subacute (over hours to days) and is accompanied by high fever. The sudden, cataclysmic nature of the headache is the key feature pointing towards SAH.

Question 130. Vegetations involving the mitral valve are most commonly seen in which condition?

A. Libman-Sacks

B. Infective Endocarditis

C. NBTE (Nonbacterial Thrombotic Endocarditis)

D. Rheumatic Fever

Correct answer: B

Vegetations on heart valves are the pathognomonic lesion of infective endocarditis (IE). A vegetation is an infected mass composed of a mixture of platelets, fibrin, microorganisms (bacteria or fungi), and inflammatory cells. In native valve endocarditis, the mitral valve is the most commonly affected valve, followed closely by the aortic valve. These vegetations are often friable and can break off, leading to septic emboli that can cause infarcts or abscesses in distant organs like the brain, spleen, or kidneys. While other conditions can cause valvular vegetations—such as the sterile vegetations of Libman-Sacks endocarditis (A) in SLE or nonbacterial thrombotic endocarditis (C) in malignancy—infective endocarditis is by far the most common cause of large, destructive valvular vegetations.

Question 131. All of the following conditions are associated with low glucose levels in pleural fluid, except which one?

A. Empyema

B. Malignant pleural effusion

C. Rheumatoid arthritis

D. Dressler's syndrome

Correct answer: D

A low glucose level in pleural fluid (pleural fluid glucose < 60 mg/dL or a fluid-to-serum ratio < 0.5) indicates increased metabolic activity within the pleural space. This is typically caused by the utilization of glucose by a high number of cells, such as bacteria, inflammatory cells, or malignant cells. The classic causes of a low glucose pleural effusion include :1. Empyema or complicated para pneumonic effusion, where bacteria and neutrophils consume glucose.2. Malignant pleural effusion, where the tumor cells have high metabolic rates.3. Pleural effusion associated with Rheumatoid Arthritis, due to impaired glucose transport into the pleural space and high inflammatory activity.4. Tuberculous pleurisy.

Question 132. A 25-year-old woman with a one-month history of fever presents with headache and ataxia. Brain imaging reveals ventricular dilatation with prominent basal exudates. Which cerebrospinal fluid (CSF) finding is most likely in this condition?

A. Lymphocytosis, Low Glucose, High Protein

B. Lymphocytosis, Normal Glucose, High Protein

C. Lymphocytosis, Low Glucose, Normal Protein

D. Neutrophilia, Low Glucose, Low Protein

Correct answer: A

The clinical presentation of a subacute or chronic meningitis (fever, headache, ataxia for one month) combined with imaging findings of communicating hydrocephalus (dilated ventricles) and basal exudates (inflammation and enhancement at the base of the brain) is classic for Tuberculous (TB) Meningitis. The cerebrospinal fluid (CSF) profile in TB meningitis is highly characteristic. The inflammatory process disrupts the blood-brain barrier, leading to a very high protein level. The mycobacteria metabolize glucose, and inflammation impairs glucose transport into the CSF, resulting in a low glucose level (hypoglycorrhachia). The inflammatory cell response is typically a pleocytosis that is predominantly lymphocytic. This classic triad of lymphocytosis, low glucose, and high protein is the hallmark CSF finding for TB meningitis, distinguishing it from acute bacterial meningitis (which is neutrophilic) and viral meningitis (which typically has normal glucose).

Question 133. Mission Indradhanush primarily targets improvement in which of the following areas?

A. Non-communicable diseases

B. Universal immunization

C. Family planning

D. Safe water and sanitation

Correct answer: B

Mission Indradhanush is a flagship public health initiative launched by the Government of India

in December 2014. Its primary and singular focus is on strengthening and re-energizing the routine immunization program to achieve full immunization coverage for all children under the age of two and all pregnant women. The mission is aimed at addressing the issue of vaccination gaps, targeting populations that are unvaccinated or only partially vaccinated. The name Indradhanush, meaning rainbow, was initially chosen to represent the seven vaccine-preventable diseases it targeted : diphtheria, pertussis (whooping cough), tetanus, polio, tuberculosis, measles, and hepatitis B. The program has since expanded to include additional vaccines as per the National Immunization Schedule. Subsequent phases, known as Intensified Mission Indradhanush (IMI), have been launched to accelerate progress in specific high-priority districts and urban areas, with the ultimate goal of achieving universal immunization and reducing child mortality from preventable diseases.

Question 134. A study follows a normal distribution with a median of 200 and a standard deviation of 20. Between which values will approximately 68% of the observations lie?

A. 160-240

B. 170-230

C. 180-220

D. 190-210

Correct answer: C

This question refers to the empirical rule of a normal distribution. In a normal distribution, the mean, median, and mode are all equal. Therefore, the mean of this distribution is 200. The empirical rule states that for a normal distribution, specific percentages of

Question 135. Which of the following techniques or methods is based on behavioral sciences?

A. Management by objectives

B. Network analysis

C. Systems analysis

D. Decision making

Correct answer: A

Management by Objectives (MBO) is a management model that is heavily based on principles from the behavioral sciences, particularly motivation theory. MBO aims to improve the performance of an organization by clearly defining objectives that are agreed upon by both management and employees. The core idea is that involving employees in goal setting and action planning will increase their commitment, motivation, and alignment with organizational goals. This participatory approach draws directly from behavioral science concepts like Douglas McGregor's Theory Y, which assumes that employees are internally motivated and enjoy their work. In contrast, network analysis (like PERT and CPM) and systems analysis are quantitative

management techniques derived from operations research and systems theory, focusing on processes and structures rather than human behavior. Decision making is a general process, not a specific technique based on behavioral sciences.

Question 136. According to the Sustainable Development Goals (SDGs), what is the target maternal mortality ratio (MMR) in terms of maternal deaths?

A. <70 per 1 lakh live births

B. <100 per 1 lakh live births

C. <7 per 1000 live births

D. <10 per 1000 live births

Correct answer: A

< 70 per 1 lakh live birthsThe Sustainable Development Goals (SDGs) are a set of 17 global goals established by the United Nations in 2015. SDG 3 is focused on ensuring

Question 137. Where should liquid chemical biomedical waste be disposed of?

A. White

B. Yellow

C. Blue

D. Red

Correct answer: B

According to India's Bio-Medical Waste Management Rules, different categories of waste are segregated into color-coded containers for appropriate treatment and disposal. Chemical waste, which includes discarded chemicals used in disinfection, laboratory reagents, and expired or discarded disinfectants, falls into the Yellow category. This category is broad and also includes human anatomical waste, soiled waste, and expired medicines. Specifically, liquid chemical waste should be pre-treated (if required) and then sent for disposal in the yellow stream, typically to a secure landfill or for incineration depending on its nature. It should not be mixed with recyclable plastics (Red), glass (Blue), or sharps (White/Translucent). Proper segregation ensures that hazardous chemicals are handled safely and do not contaminate other waste streams or the environment.

Question 138. What is the maximum number of working hours, including overtime, permitted for an individual under the Factories Act?

A. 48 Hrs

B. 50 Hrs

C. 60 Hrs

D. 100 Hrs

Correct answer: C

The Factories Act of 1948 in India sets the legal standards for working conditions in factories,

including limitations on working hours to protect the health and safety of workers. The

Question 139. Which vaccine should be given after a disaster?

A. Vaccination against typhoid

B. Vaccination against cholera

C. Vaccination against typhoid and cholera

D. Vaccination against tetanus

Correct answer: D

In the aftermath of a natural disaster such as an earthquake or flood, there is a significantly increased risk of traumatic injuries, including cuts, lacerations, and crush injuries, from debris and unsafe conditions. These wounds are often contaminated with soil and dirt, which can contain spores of Clostridium tetani, the bacterium that causes tetanus. Therefore, one of the most important and recommended public health measures in a post-disaster setting is to ensure that injured individuals receive tetanus prophylaxis. This may involve administering a booster dose of the tetanus toxoid vaccine to those with an unclear or outdated vaccination history. Tetanus Immune Globulin (TIG) may also be given for heavily contaminated wounds. While there is a concern for water-borne diseases, mass vaccination campaigns against typhoid or cholera are generally not recommended as a first-line response; the priority is providing safe water and sanitation.

Question 140. What is the MONICA project?

A. Multinational monitoring of trends and determinants in Cardiovascular Disease

B. Multinational monitoring of trends and determinants in Cerebrovascular Disease

C. Multinational monitoring of trends and determinants in Diabetes

D. Multinational monitoring of trends and determinants in Congenital Heart Disease

Correct answer: A

The MONICA project was a major international collaborative study initiated by the World Health Organization (WHO) in the 1980s. The name MONICA is an acronym for MONItoring of trends and determinants in CArdiovascular disease. It was one of the largest epidemiological studies ever conducted, involving 38 centers in 21 countries over a 10-year period. The primary

Question 141. What is the period for which Extended Sickness Benefit (ESB) is provided for tuberculosis under the Employees’ State Insurance (ESI) Act?

A. 91 days

B. 1-year

C. 2 years

D. 4 years

Correct answer: C

The Employees' State Insurance (ESI) Act in India provides a range of social security benefits to

insured workers. The Sickness Benefit provides cash payments to workers during periods of certified sickness for a maximum of 91 days. However, for certain long-term diseases that require prolonged treatment and absence from work, an Extended Sickness Benefit (ESB) is available after the initial 91 days are exhausted. Tuberculosis is one of the specified diseases eligible for ESB. An insured person suffering from tuberculosis is entitled to receive ESB for a period that may be extended up to two years. This extended benefit is provided to ensure financial support for the worker and their family during the long course of anti-tubercular treatment and recovery, encouraging treatment adherence.

Question 142. A person presents 4 hours after sustaining a clean wound without laceration and has a history of receiving a tetanus vaccine 10 years ago. What should be the next step in management?

A. Full course Tetanus vaccine to be given

B. Full dose TT with TIG (Tetanus Immune Globulin)

C. Single-dose TT

D. No need for any vaccine

Correct answer: C

The management of a wound for tetanus prophylaxis depends on both the nature of the wound and the patient's vaccination history. In this case, the patient has a clean, minor wound. His last dose of the tetanus toxoid (TT) vaccine was 10 years ago. According to standard immunization guidelines, immunity from the tetanus vaccine wanes over time, and a booster dose is recommended every 10 years. For a patient with a clean, minor wound whose last dose was 10 or more years ago, or if their vaccination history is unknown, the correct management is to administer a single booster dose of the TT vaccine. This will be sufficient to boost their antibody levels and provide adequate protection. Tetanus Immune Globulin (TIG) is not necessary for clean, minor wounds. A full primary course of the vaccine is only required for individuals who have not been adequately immunized in the past.

Question 143. Which influenza virus strain was responsible for the most recent influenza pandemic?

A. H1N1

B. H5N1

C. H7N7

D. H3N2

Correct answer: A

The most recent influenza pandemic occurred in 2009. This global outbreak was caused by a novel strain of the influenza A virus. This new virus was a reassortant virus, containing a unique combination of genetic material from human, avian, and swine influenza viruses. It was officially designated as the Influenza A (H1N1)pdm09 virus. Because the population had little to no

pre-existing immunity to this novel strain, it spread rapidly across the globe, leading the World Health Organization to declare a pandemic in June 2009. This virus, often referred to colloquially as swine flu, has since continued to circulate as a seasonal influenza strain. The H5N1 and H7N7 strains are avian influenza viruses that have caused sporadic human infections but have not led to a pandemic.

Question 144. Which parameter is most suitable for routine monitoring of air pollution?

A. Sulphur dioxide, smoke, and particulate matter

B. Sulphur dioxide, hydrogen sulphide, carbon monoxide

C. Carbon dioxide, hydrogen sulphide, lead

D. Sulphur dioxide, lead, and particulate matter

Correct answer: A

Routine monitoring of ambient air pollution focuses on a set of key criteria pollutants that are known to be widespread and have significant health effects. The Air Quality Index (AQI) in many countries, including India's National Air Quality Index, is based on the measurement of several pollutants. The most fundamental and historically important indicators used for routine monitoring are sulfur dioxide (SO_2), smoke, and suspended particulate matter (SPM), particularly $PM_{2.5}$ and PM_{10}. SO_2 is a primary indicator of pollution from burning fossil fuels like coal. Smoke and particulate matter are products of combustion and have profound respiratory and cardiovascular health impacts. While other pollutants like carbon monoxide, nitrogen oxides, ozone, and lead are also important and are included in comprehensive AQI calculations, the combination of SO_2, smoke, and particulate matter represents the core group of pollutants that have traditionally formed the basis of air pollution monitoring.

Question 145. Which statistical measure is used to compare the variation between two different data sets?

A. Variance

B. Coefficient of variation

C. The standard error of mean

D. Standard deviation

Correct answer: B

When comparing the variability or dispersion of two different datasets, especially when their means are significantly different or they are measured in different units, using the standard deviation or variance directly can be misleading. The coefficient of variation (CV) is the appropriate statistical measure for this purpose. The CV is a standardized, unitless measure of relative variability. It is calculated by dividing the standard deviation (σ) by the mean (μ) and is often expressed as a percentage : $CV = (\sigma / \mu) \times 100\%$. By expressing the standard deviation as a percentage of the mean, the CV allows for a direct comparison of the degree of variation

between two or more groups, independent of their respective means or units of measurement. A higher CV indicates greater relative variability.

Question 146. In which type of management or evaluation method is the benefit expressed in natural units?

A. Program budgeting system

B. Network analysis

C. Cost-effective analysis

D. Cost-benefit analysis

Correct answer: C

Cost-effectiveness analysis (CEA) is a type of economic evaluation used to compare the relative costs and outcomes of two or more different interventions. A key feature of CEA is that the health outcomes, or benefits, are measured in natural units. These are non-monetary units that are directly relevant to the health condition being studied. Examples of natural units include lives saved, cases of disease prevented, years of life gained, or a clinical measurement like reduction in blood pressure (mmHg). The result of a CEA is typically expressed as a ratio, such as the cost per life saved. This contrasts with cost-benefit analysis (CBA), where both the costs and the health benefits are converted

Question 147. Under the Mental Healthcare Act (MHA) 2017, what is the maximum duration for which a person can be admitted voluntarily?

A. 48 hours

B. 7 days

C. 30 days

D. 90 days

Correct answer: C

The Mental Healthcare Act (MHCA) of 2017 outlines the procedures for admission to a mental health establishment. For a minor who is admitted with the consent of their nominated representative, the Act specifies the duration for which they can be admitted. Section 87 of the Act states that a medical officer or psychiatrist who has examined the minor can recommend their admission. However, this admission is for a limited period. The Act clarifies that no minor shall be admitted as an independent patient for a period exceeding thirty days at a time. If further stay is required, a reassessment must be conducted. This provision is designed to safeguard the rights of the minor and ensure that institutionalization is regularly reviewed and justified, preventing indefinite stays without proper oversight.

Question 148. Blood bags should be discarded in which color-coded biomedical waste disposal bag?

A. Yellow bag

B. Black bag

C. Red bag

D. White bag

Correct answer: A

According to the Bio-Medical Waste Management Rules in India, different categories of waste are

Question 149. Which of the following conditions is not considered an absolute contraindication to the use of an intrauterine device (IUD)?

A. Pregnancy

B. Undiagnosed vaginal bleeding

C. Pelvic inflammatory disease (PID)

D. Uterine malformation

Correct answer: D

The World Health Organization (WHO) provides Medical Eligibility Criteria for contraceptive use. For Intrauterine Devices (IUDs), there are several absolute contra indications (Category 4), where the risk is unacceptable. These include suspected or confirmed pregnancy, current pelvic inflammatory disease (PID) or a high risk of STIs, and unexplained or undiagnosed abnormal vaginal bleeding, as this could be a sign of an underlying malignancy. A uterine malformation (such as a bicornuate or septate uterus) that significantly distorts the uterine cavity is also a contraindication. However, this is often considered a relative contraindication (Category 3 or 4 depending on severity), as the IUD may not fit properly, leading to a higher risk of expulsion or perforation. Compared to active pregnancy or PID, which are absolute contra indications, a uterine anomaly's contraindication can be more nuanced, making it the most likely answer for not an absolute contraindication in all cases.

Question 150. A study assessing malnutrition selected 100 children each from rural and urban areas. Thirty rural children and twenty urban children were found to be malnourished. Which statistical test is appropriate to compare these two groups?

A. Paired t-test

B. Chi-square

C. The standard error of the mean

D. ANOVA

Correct answer: B

This study aims to compare the proportion of malnourished children between two independent groups (rural vs. urban). The data collected are categorical (malnourished or not malnourished). The appropriate statistical test to determine if there is a significant association between two categorical variables is the chi-square (χ^2) test of independence. This test compares the observed frequencies in each category (e.g., 30 rural malnourished, 70 rural not-malnourished,

etc.) with the frequencies that would be expected if there were no association between the area of residence and nutritional status. A significant chi-square statistic would indicate that the prevalence of malnutrition is different between the rural and urban groups. A t-test (A) is used to compare means of continuous data, and ANOVA (D) is

Question 151. The disinfectant action of bleaching powder is primarily due to which component?

A. Chlorine

B. Hydrochloric acid

C. Hypochlorous acid

D. Chloramines

Correct answer: C

Bleaching powder (calcium hypochlorite) is a common disinfectant, especially for water purification. When bleaching powder is dissolved in water, it hydrolyzes to form hypochlorous acid (HOCl) and calcium hydroxide. It is the hypochlorous acid that is the primary active disinfecting agent. Hypochlorous acid is a powerful oxidizing agent that effectively kills microorganisms by destroying their essential enzymes and structural proteins. The amount of free available chlorine, which exists primarily as hypochlorous acid and the hypochlorite ion (OCl^-) in equilibrium, determines the disinfecting power. HOCl is a much more potent disinfectant than the OCl^- ion. Although the process releases chlorine, it is the resulting hypochlorous acid in the aqueous solution that carries out the main bactericidal action. Chloramines (D) are formed when chlorine reacts with ammonia.

Question 152. Which of the following antibodies is not transferred from the mother to the fetus?

A. Polio

B. Diphtheria

C. Pertussis

D. Tetanus

Correct answer: A

During pregnancy, certain maternal antibodies are transferred from mother to fetus through the placenta. This transfer mainly involves IgG, which provides passive immunity to the newborn during the first few months of life.Antibodies against diseases such as Diphtheria, Pertussis, and Tetanus are mainly of the IgG type and are effectively transferred across the placenta. This is why maternal vaccination

Question 153. Screening is generally not effective for detecting which type of carcinoma?

A. Carcinoma prostate

B. Carcinoma colon

C. Carcinoma breast

D. Testicular tumor

Correct answer: D

For a screening program to be useful and recommended as a public health policy, it must meet several criteria, including that the disease is a significant health problem, there is a recognizable early or latent stage, and there is an effective treatment available. While screening programs are widely established and recommended for breast cancer (mammography), colon cancer (colonoscopy, FIT), and prostate cancer (PSA testing, though its utility for mass screening is debated), there is currently no recommended population-based screening program for testicular cancer. This is because testicular cancer is relatively rare, has a very high cure rate (over 95%) even when diagnosed at a symptomatic stage, and there is no evidence that a screening program would improve these already excellent outcomes. Testicular self-examination is sometimes encouraged, but it is not a formal public health screening program.

Question 154. Admission rate bias is classified under which type of bias?

A. Reporting bias

B. Response bias

C. Berkesonian bias

D. None

Correct answer: C

Berksonian bias, also known as admission rate bias, is a specific type of selection bias that can occur in case-control studies that are conducted in a hospital setting. This bias arises because the combination of a particular exposure and a

Question 155. Which of the following diseases is transmitted through contaminated water?

A. Yellow fever

B. Scabies

C. Cholera

D. Dysentery

Correct answer: C

Water-borne diseases are illnesses caused by pathogenic microorganisms that are transmitted directly through the consumption of contaminated water. Cholera is the quintessential example of a water-borne disease. It is an acute diarrheal illness caused by infection of the intestine with the bacterium Vibrio cholerae, which is typically ingested through water or food contaminated with feces from an infected person. Large, explosive epidemics of cholera are almost always linked to a contaminated public water source. Dysentery (D), which is bloody diarrhea, can also

be water-borne (caused by agents like Shigella or Entamoeba histolytica), making it a plausible answer. However, cholera is more exclusively and classically defined as water-borne. Yellow fever (A) is a vector-borne disease transmitted by mosquitoes. Scabies (B) is a skin infestation transmitted by direct skin-to-skin contact and is considered a water-washed disease, related to poor hygiene rather than ingestion of contaminated water.

Question 156. Under the Vision 2020 initiative, what is the population coverage targeted by a Secondary Service Centre?

A. 10,000

B. 50,000

C. 1 lakh

D. 5 lakh

Correct answer: D

Vision 2020 : The Right to Sight was a global initiative launched by the World Health Organization (WHO) and the International Agency for the Prevention of Blindness (IAPB) to eliminate the main causes of avoidable blindness by the year 2020. A key component of this initiative was a tiered service delivery model to ensure eye care reached all levels of the population.

Question 157. CA-125 is used as a screening marker for ovarian cancer. In a cohort, histopathological confirmation was performed. Among 100 women who tested positive, 60 were confirmed to have ovarian cancer, and among 100 women who tested negative, 20 were found to have ovarian cancer. What is the negative predictive value (NPV) of this test?

A. 20/100

B. 40/100

C. 60/100

D. 80/100

Correct answer: D

The Negative Predictive Value (NPV) of a test is the probability that a person who tests negative for a disease truly does not have the disease. It is calculated from the group of people who tested negative.The formula for NPV is : NPV = (Number of True Negatives) / (Total Number of people who tested negative) From the data provided : Total number of women who tested negative = 100.Out of these 100 women who tested negative, 20 did have ovarian cancer. These are the False Negatives (FN).Therefore, the number of women who tested negative and truly did not have the disease (the

Question 158. The difference in incidence rates between the exposed and non-exposed groups is best expressed by which measure?

A. Relative Risk

B. Attributable Risk

C. Population Attributable Risk

D. Odds Ratio

Correct answer: B

Attributable Risk (AR), also known as Risk Difference or Excess Risk, is an absolute measure of the association between an exposure and an outcome. It is calculated as the difference between the incidence rate of the disease in the exposed group and the incidence rate in the unexposed group (AR = Ie - Iu). The Attributable Risk represents the excess risk of disease in the exposed group that is directly attributable to the exposure itself. It answers the question : How much of the disease in exposed individuals is due to the exposure? This measure is particularly useful from a public health perspective as it indicates the potential reduction in disease incidence that could be achieved if the exposure were eliminated from the exposed group. Relative Risk, in contrast, is a ratio (Ie / Iu) and measures the strength of the association.

Question 159. If the value of one variable is known, which coefficient can be used to estimate or determine the other variable?

A. Coefficient of Variation

B. Coefficient of Correlation

C. Coefficient of Regression

D. Coefficient of Determination

Correct answer: C

A regression analysis is a statistical method used to model the relationship between a dependent variable (the one you want to predict) and one or more independent variables (the ones you use to make the prediction). The output of a simple linear regression is an equation of the form Y = a + bX, where 'Y' is the dependent variable, 'X' is the independent variable, 'a' is the intercept, and 'b' is the regression coefficient. The regression coefficient ('b') quantifies the change in the

Question 160. In which of the following situations is prospective screening usually carried out?

A. Neonate for thyroid diseases

B. Immigrant screening

C. Pap smear for a 45-year-old female

D. Diabetes mellitus screening for a 40-year-old male

Correct answer: A

Prospective screening refers to the proactive screening of a defined population, often at a specific time point, to detect disease early, usually before the onset of symptoms. Newborn screening for congenital hypothyroidism is a quintessential example of universal prospective

screening. This is a public health program where every single newborn is screened via a heel-prick blood test within the first few days of life. The aim is to prospectively identify all affected infants to initiate thyroid hormone replacement therapy immediately, thereby preventing the severe and irreversible intellectual disability (cretinism) associated with the untreated condition. While screening immigrants (B) is also prospective, newborn screening is a more universal and classic example. Pap smears (C) and diabetes screening (D) are often performed opportunistically when a person visits a healthcare provider for another reason, although they can also be part of prospective programs.

Question 161. Stimulation of the external auditory canal can produce a cough due to involvement of which nerve?

A. Auricular branch of the Vagus nerve

B. Greater auricular nerve

C. Auriculotemporal nerve

D. Facial nerve

Correct answer: A

The phenomenon where stimulation of the external auditory canal triggers a cough is

Question 162. Which of the following features is not typical of tuberculous otitis media?

A. Painful otorrhea

B. Central perforation

C. Pale granulations

D. Ossicular chain intact or necrosed

Correct answer: A

Tuberculous otitis media is a rare form of chronic suppurative otitis media caused by Mycobacterium tuberculosis. It has several classic clinical features that distinguish it from the more common pyogenic forms. One of its most defining characteristics is a painless, profuse, and persistent otorrhea (ear discharge). The lack of pain, despite significant tissue destruction, is a major clinical clue. Other classic findings include the presence of multiple perforations of the tympanic membrane which may later coalesce, pale and sluggish granulations in the middle ear cleft, and severe destruction of the ossicular chain, leading to a significant conductive hearing loss. Facial nerve palsy is also more common than in typical otitis media. Therefore, painful otorrhea is the feature that is not characteristic; the discharge is classically described as painless.

Question 163. Partial or complete closure of the nasal cavity is performed as a treatment for which condition?

A. Atrophic rhinitis

B. Allergic rhinitis

C. Vasomotor rhinitis

D. Occupational rhinitis

Correct answer: A

Atrophic rhinitis (ozena) is a chronic nasal condition characterized by progressive atrophy of the nasal mucosa and turbinate bones, leading to a paradoxically wide nasal cavity filled with foul-smelling crusts. The goal of surgical treatment is to narrow the abnormally wide nasal cavity to reduce crust formation and improve mucosal function. Young's operation is a surgical procedure that involves creating mucocutaneous flaps to achieve a complete closure of the nostril. The nostril is kept closed for several months to a year, allowing the nasal mucosa to rest, regenerate, and reverse some of the atrophic changes. A modified version of the procedure involves only a partial closure. These surgical narrowing procedures are specific to the management of severe, recalcitrant atrophic rhinitis and are not used for other forms of rhinitis like allergic or vasomotor rhinitis.

Question 164. What is the name given to the occipitofrontal view on an X-ray of the paranasal sinuses (PNS)?

A. Caldwell view

B. Water's view

C. Towne's view

D. Pine's view

Correct answer: A

Plain X-rays for evaluating the paranasal sinuses involve specific projections to visualize the different sinuses without overlap. The occipitofrontal view, more commonly known as the Caldwell view, is a standard projection used for this purpose. It is taken with the patient's nose and forehead pressed against the film cassette and the X-ray beam angled at approximately 15 degrees caudally. This specific angulation projects the dense petrous ridges below the floor of the maxillary sinuses, providing an excellent, unobstructed view of the frontal sinuses and the ethmoid sinuses. In contrast, the Water's view (occipitomental view) is designed to provide the best visualization of the maxillary sinuses. The Towne's view is used for imaging the occipital bone and petrous pyramids.

Question 165. What is the term used for widening of the cartilaginous portion of the external auditory canal?

A. Otoplasty

B. Myringoplasty

C. Tympanoplasty

D. Meatoplasty

Correct answer: D

A meatoplasty is a surgical procedure specifically designed to widen the meatus, or opening, of the external auditory canal. It is often performed in conjunction with mastoidectomy or other middle ear surgeries to improve aeration and drainage, allow for easier post-operative cleaning and inspection of the mastoid cavity, and prevent the accumulation of debris that can lead to recurrent infections. The procedure typically involves removing a portion of the conchal cartilage and surrounding soft tissue to enlarge the entrance to the canal. Tympanoplasty (C) is a broader term for the surgical reconstruction of the eardrum and/or the ossicular chain. Myringoplasty (B) specifically refers to the repair of a perforated eardrum. Otoplasty (A) is a cosmetic procedure to alter the shape or position of the external ear (pinna).

Question 166. A patient presents to the emergency department after a road traffic accident with hypotension, respiratory distress, subcutaneous emphysema, and absent air entry on one side. What is the most appropriate immediate management?

A. Needle decompression in the 5th intercostal space in the midaxillary line

B. Continue Positive Pressure Ventilation (PPV)

C. Shift to ICU and intubate

D. Secure IV line and start fluid resuscitation after insertion of the wide-bore IV line

Correct answer: A

Needle decompression in the 5th intercostal space in the mid axillary lineThe patient's clinical signs—respiratory distress, hypotension, unilateral absent breath sounds, and subcutaneous emphysema following trauma—are classic for a tension pneumothorax. This is a life-threatening emergency that causes obstructive shock and requires immediate intervention to relieve the pressure in the chest. The definitive immediate management is needle decompression (thoracostomy). The most recent Advanced Trauma Life Support (ATLS) guidelines recommend inserting a large-bore needle into the 5th intercostal space in the anterior or mid-axillary line. This site is preferred over the traditional 2nd intercostal space in the mid-clavicular line because the chest wall is thinner here, reducing the risk of the needle not reaching the pleural space. This procedure converts the tension pneumothorax into a simple pneumothorax, which should then be followed by the insertion of a formal chest tube. Fluid resuscitation is also important, but relieving the tension physiology is the first priority.

Question 167. Which of the following is not seen in the ASEPSIS score?

A. Erythema

B. Induration

C. Serous discharge

D. Purulent exudate

Correct answer: B

The ASEPSIS score is a validated wound scoring system used to assess and quantify the severity of a surgical site infection (SSI). It assigns points based on both clinical findings

observed during the postoperative period and the need for additional treatment. The clinical criteria scored as part of the ASEPSIS system include :1. The presence of serous discharge.2. The presence of erythema (redness).3. The presence of purulent exudate (pus).4. The separation of the deep tissues.Additional points are given if the patient requires antibiotic treatment for the wound infection or requires drainage of pus under local or general anesthesia. The system also considers the results of microbiological culture from the wound. Induration (hardening of the tissue) is a common sign of inflammation and infection but is not a specific, scored component of the ASEPSIS scoring system itself.

Question 168. What is the recommended treatment for renal cell carcinoma (RCC) measuring less than cm?

A. Partial nephrectomy

B. Radical nephrectomy

C. Radical nephrectomy + postoperative radiotherapy

D. Radical nephrectomy + chemotherapy

Correct answer: A

For small, localized renal masses, the goal of treatment is to achieve a complete oncological cure while preserving as much healthy kidney function as possible. For a Renal Cell Carcinoma (RCC) that is less than 4 cm in size and confined to the kidney (Stage T1a), the standard of care is a nephron-sparing approach, specifically a partial nephrectomy. This procedure involves the surgical excision of the tumor along with a small margin of normal kidney tissue, leaving the rest of the healthy kidney intact. This approach has been shown to have equivalent long-term cancer control and survival outcomes compared to a radical nephrectomy (complete removal of the kidney) for these small tumors, but with the significant advantage of better long-term preservation of renal function and a lower risk of developing chronic kidney disease.

Question 169. Esophageal manometry shows panesophageal pressurization with preserved distal contractile integrity (>50 mmHg) in the esophageal body. What is the most likely diagnosis?

A. Type 1 achalasia

B. Type 2 achalasia

C. Type 3 achalasia

D. Jackhammer esophagus

Correct answer: C

Esophageal manometry is the gold standard test used to evaluate esophageal motility disorders. According to the Chicago Classification, achalasia is divided into three types based on manometric findings.Type 3 achalasia (spastic achalasia) is characterized by premature or spastic contractions in the distal esophagus along with impaired relaxation of the lower esophageal sphincter (LES). On manometry, it shows very high distal contractile integral (DCI)

values, often greater than 450 mmHg·s·cm, indicating strong spastic contractions.Although panesophageal pressurization can be seen, the distinguishing feature of Type 3 achalasia is the presence of abnormal spastic contractions with preserved or excessive contractile activity in the esophageal body.Other options are less consistent with the findings:1. Type 1 achalasia : Minimal contractility and no significant pressurization (classic achalasia).2. Type 2 achalasia : Panesophageal pressurization but without strong distal contractions.3. Jackhammer esophagus: Shows extremely strong contractions but normal LES relaxation, unlike achalasia.Therefore, the findings of high contractile integrity with panesophageal pressurization are most consistent with Type 3 achalasia (spastic achalasia).

Question 170. What is the appropriate approach to managing an abdominal aortic aneurysm (AAA)?

A. Monitor till size reaches 55 mm

B. Allograft

C. Autograft

D. Xenograft

Correct answer: A

IsograftTransplants are classified based on the genetic relationship between the donor and the recipient.An autograft is a transplant of tissue from one site to another on the same individual.An isograft (or syngeneic graft) is a transplant between two individuals who are genetically identical. This occurs only between monozygotic (identical) twins. Because there are no genetic differences, the recipient's immune system does not recognize the graft as foreign, and there is no risk of rejection.An allograft is a transplant between two genetically different individuals of the same species (e.g., from one human to another, non-twin human). This is the most common type of transplantation and requires immunosuppression to prevent rejection.A xenograft is a transplant between individuals of different species (e.g., from a pig to a human).

Question 171. Which of the following is not a component of the Thoracoscore?

A. ASA score

B. Surgery Priority

C. Performance Status

D. Genetics

Correct answer: D

The Thoracoscore is a multivariate logistic regression model designed to predict the risk of in-hospital mortality after general thoracic surgery. It incorporates several pre-operative and intra-operative variables to provide a patient-specific risk assessment. The key components of the Thoracoscore include patient-related factors such as age, sex, ASA (American Society of Anesthesiologists) physical status classification, and performance status (e.g., dyspnea score). It also includes procedure-related factors, such as the diagnosis (malignant vs. benign), the

type of surgery performed, and the priority of the surgery (elective vs. emergency). The model uses these variables to calculate a predicted mortality

Question 172. Which of the following statements correctly describes a retrosternal goiter?

A. All patients should undergo CT chest

B. All patients require a median sternotomy

C. It receives blood supply from thoracic vessels

D. Majority of retrosternal goiters should be operated on immediately

Correct answer: A

A retrosternal (or substernal) goiter is defined as a thyroid gland that has a significant portion (>50%) of its mass located below the thoracic inlet. The most accurate statement regarding its management is that all patients should undergo a CT scan of the neck and chest. A CT scan is the imaging modality of choice to precisely define the extent of the goiter's descent into the mediastinum, delineate its relationship to adjacent vital structures (trachea, esophagus, great vessels), and assess the degree of tracheal compression or deviation, which is crucial for operative planning. Statement B is false; over 90% of retrocessional goiters can be safely removed through a standard cervical (neck) incision without requiring a sternotomy. Statement C is false; the vast majority of retrocessional goiters maintain their blood supply from the cervical vessels (superior and inferior thyroid arteries). Statement D is also generally false; surgery is usually performed electively.

Question 173. Which of the following factors is not included in King’s Criteria for prognostic assessment in acute fulminant liver failure?

A. Age

B. Jaundice > 7 days

C. Serum bilirubin > 17.5 mg/dL

D. INR > 3.5

Correct answer: C

King’s College Criteria are used to assess prognosis in acute fulminant liver failure (ALF) and to determine the need for urgent liver transplantation. The criteria differ depending on whether the liver failure is caused by

Question 174. Which of the following components is not part of the primary survey?

A. CECT to look for bleeding

B. Exposure of the whole body

C. ABC (Airway, Breathing, Circulation)

D. Recording BP (Blood Pressure)

Correct answer: A

The primary survey in trauma management, as outlined by the Advanced Trauma Life Support (ATLS) protocol, is a rapid, systematic assessment designed to identify and immediately treat life-threatening injuries. It follows the mnemonic ABCDE :A : Airway maintenance with cervical spine protection.B : Breathing and ventilation.C : Circulation with hemorrhage control (this includes assessing pulse and recording BP).D : Disability (neurological status, e.g., GCS).E : Exposure and Environmental control (undressing the patient completely to allow for a thorough examination).These steps are performed rapidly at the bedside. A Contrast-Enhanced Computed Tomography (CECT) scan is a time-consuming diagnostic imaging study. It is part of the secondary survey, which is a more detailed, head-to-toe examination performed only after the primary survey is complete and the patient has been resuscitated and is hemodynamically stable.

Question 175. What is the most frequent site of gastrinoma occurrence in patients with MEN- syndrome?

A. Duodenum

B. Jejunum

C. Pancreas

D. Ileum

Correct answer: A

Gastrinomas are neuroendocrine tumors that secrete excess gastrin, leading to Zollinger-

Question 176. A patient presents with precancerous lesions, abdominal distension, and inguinal lymphadenopathy. On examination, enlarged lymph nodes are noted. Which carcinoma is most likely associated with this presentation?

A. Carcinoma of the Penis

B. Carcinoma of the Testis

C. Carcinoma of the Prostate

D. Carcinoma of the Bladder

Correct answer: A

The clinical picture described points towards carcinoma of the penis. Precancerous lesions on the penis, such as erythroplasia of Queyrat or Bowen's disease (carcinoma in situ), are known precursors to invasive squamous cell carcinoma, the most common type of penile cancer. The primary tumor on the penis can then metastasize via the lymphatic system. The first site of lymphatic drainage from the skin and glans of the penis is to the superficial and deep inguinal lymph nodes. Therefore, the presence of inguinal lymphadenopathy in a patient with a penile lesion is highly suggestive of metastatic spread. The abdominal swelling could be related to more advanced disease with involvement of pelvic or retroperitoneal lymph nodes. In contrast, testicular cancer metastasizes primarily to the retroperitoneal lymph nodes, and prostate cancer spreads to the pelvic nodes initially, not typically causing inguinal adenopathy.

Question 177. What is the T stage of a lung carcinoma measuring . cm that does not involve the pleura?

A. Tla

B. T2

C. T1b

D. Tic

Correct answer: D

T1cThe T stage in lung cancer is determined by the size of the primary tumor and whether it has invaded nearby structures. According to the 8th edition of the AJCC (American Joint Committee on Cancer) staging manual, the T1 category is for tumors that are 3 cm or less in their greatest dimension and do not have other invasive features (like invading the main bronchus or visceral pleura).The T1 category is further subdivided by size :T1a : Tumor is 1 cm or less.T1b : Tumor is greater than 1 cm but 2 cm or less.T1c : Tumor is greater than 2 cm but 3 cm or less.

Question 178. A young man suffers a motorbike accident resulting in injury to the ileum and jejunum, requiring resection of the entire ileum and part of the jejunum. Which condition is he most likely to develop as a consequence?

A. Vitamin B12 deficiency

B. Atrophic gastritis

C. Constipation

D. None

Correct answer: A

The small intestine is responsible for the absorption of most nutrients, but specific sites are responsible for absorbing specific substances. The terminal ileum is the sole site for the absorption of two crucial substances : Vitamin B12 (bound to intrinsic factor) and bile

Question 179. A patient develops epigastric pain after a heavy meal, with tenderness and rigidity in the upper abdomen. An X-ray reveals pneumomediastinum. What is the most likely underlying cause?

A. Spontaneous esophageal rupture

B. Penetrating foreign body injury to esophagus

C. Perforated peptic ulcer

D. Rupture of emphysematous bulla

Correct answer: A

The clinical scenario described is classic for Boerhaave syndrome, which is a spontaneous, full-thickness rupture of the esophagus. This typically occurs after an episode of forceful vomiting or retching (often after a heavy meal or alcohol binge), which causes a sudden, massive increase in intra esophageal pressure. The rupture most commonly occurs in the

posterolateral aspect of the distal esophagus. The rupture allows air, gastric contents, and oral flora to escape into the mediastinum, leading to chemical mediastinitis. The key radiological finding is pneumomediastinum (air in the mediastinum), which may be seen on a chest X-ray. The clinical presentation includes severe retrosternal or epigastric pain, tenderness, and sometimes subcutaneous emphysema. This is a surgical emergency with a high mortality rate. A perforated peptic ulcer causes pneumoperitoneum, not pneumomediastinum.

Question 180. A man intoxicated with alcohol falls into a manhole and sustains a perineal injury, followed by swelling of the scrotum and upper thigh, blood at the urethral meatus, and difficulty in passing urine. What is the most likely associated injury in this case?

A. Bladder rupture

B. Penile fracture

C. Bulbar urethra injury

D. Membranous urethra injury

Correct answer: C

This is a classic presentation of an anterior urethral injury, specifically a rupture of the bulbar urethra. The mechanism described, a straddle injury where the perineum is forcefully struck, is the most common cause of this injury. The bulbar urethra is fixed to the perineal membrane and is crushed against the inferior pubic arch. The clinical signs are pathognomonic : blood at the urethral meatus, a perineal hematoma, and an inability or difficulty in passing urine. The swelling of the scrotum and upper thigh is due to the extravasation of urine and blood into the superficial perineal space, which is limited by Colles' fascia. This extravasated fluid can track up onto the anterior abdominal wall but is confined to the penis and scrotum inferiorly. Membranous urethral injuries are associated with pelvic fractures.

Question 181. A patient with carcinoma of the bladder presents with breathlessness, clinical features of deep vein thrombosis, and tachycardia. According to the Wells score, what is the patient’s risk category for developing pulmonary embolism?

A. High

B. Medium

C. Low

D. Cannot comment without d-dimer values

Correct answer: A

The Wells score is a clinical prediction rule used to estimate the pre-test probability of pulmonary embolism (PE). Points are assigned for various clinical findings :Clinical signs and symptoms of DVT : +3 points (present in this patient) PE is the #1 diagnosis OR equally likely : +3 points Heart rate > 100

Question 182. Four months after undergoing a renal transplant, which infection is the patient most likely to develop?

A. Epstein-Barr Virus (EBV)

B. Cytomegalovirus (CMV)

C. Candida

D. Histoplasma

Correct answer: B

The risk of specific opportunistic infections after solid organ transplantation follows a typical timeline based on the patient's net state of immunosuppression. The period from 1 to 6 months post-transplant is the time of maximal immunosuppression and is when opportunistic viral infections are most common. Cytomegalovirus (CMV) is the single most important and frequent pathogen during this window. CMV infection can arise from reactivation of latent virus in the recipient, or more commonly, as a primary infection from a CMV-positive donor organ transplanted into a CMV-negative recipient. It can cause a wide spectrum of disease, from a mononucleosis-like syndrome to invasive tissue disease affecting the lungs, GI tract, and the allograft itself. Fungal infections like Candida and Aspergillus typically occur in the first month, while late infections (>6 months) are more often community-acquired pathogens or related to PTLD (driven by EBV).

Question 183. A patient planned for elective inguinal hernia repair has a past history of myocardial infarction and has undergone coronary artery bypass grafting (CABG). What is the most appropriate preoperative evaluation for this patient?

A. History + c/e + routine labs + angiography to look for stent patency

B. History + c/e + routine labs

C. History + c/e + routine labs + stress test

D. History+c/e + routine labs + V/Q scan

Correct answer: B

The key to this question is that the patient has a history of coronary artery disease but has already undergone definitive re vascularization with CABG. For a patient undergoing a low-to-intermediate risk elective surgery (like an inguinal hernia repair), if they have no current cardiac symptoms (e.g., no angina, no dyspnea) and have good functional capacity, the previous re vascularization is considered protective. According to major preoperative cardiac assessment guidelines (e.g., from

Question 184. A patient arrives with a stab wound to the right lower chest and is found to have hypotension and bradycardia, both of which respond to intravenous fluid resuscitation. After stabilization, the blood pressure returns to normal, and a chest X-ray reveals no abnormalities in the lung fields. What should be the next appropriate management step?

A. eFAST

B. Keep immediate chest tube

C. CECT abdomen

D. CECT chest

Correct answer: A

The patient has a penetrating injury (stab wound) to the right lower chest with initial hypotension and bradycardia, which improved after intravenous fluid resuscitation, indicating that the patient is now hemodynamically stabilized.In trauma evaluation, the next immediate step after initial stabilization is to rapidly assess for internal bleeding or organ injury. The eFAST (Extended Focused Assessment with Sonography in Trauma) is a bedside ultrasound examination used in trauma patients to quickly detect:1. Hemoperitoneum (blood in the abdominal cavity)2. Hemothorax3. Pneumothorax4. Pericardial tamponadeSince the chest X-ray shows normal lung fields, obvious pneumothorax or hemothorax is unlikely. However, a right lower chest stab wound can injure the liver, diaphragm, or cause intra-abdominal bleeding, which may not be visible on X-ray.

Question 185. In a patient who has undergone surgery for a parathyroid adenoma, what postoperative finding or test is used to confirm that the diseased parathyroid gland has been successfully and correctly removed?

A. 50% reduction in PTH after 10 minutes

B. 50% reduction in PTH after 5 minutes

C. 25% reduction in PTH after 10 minutes

D. 25% reduction in PTH after 5 minutes

Correct answer: A

During a minimally invasive parathyroidectomy for a single adenoma, it is crucial to confirm that the hypersecreting gland has been successfully removed before concluding the operation. This is done using an intraoperative parathyroid hormone (IOPTH) assay. Parathyroid hormone (PTH) has a very short half-life of only 3 to 5 minutes. This property allows for a rapid assessment of surgical success. A baseline PTH level is drawn before the adenoma is excised. After the suspected adenoma is removed, another blood sample is drawn, typically at 5 minutes and 10 minutes post-excision. The most widely accepted criterion for a successful parathyroidectomy (known as the Miami criterion) is a greater than 50% reduction in the PTH level from the highest pre-excision baseline level at the 10-minute post-excision sample. A successful drop confirms that the source of the excess PTH has been removed.

Question 186. What type of flap is most commonly utilized for breast reconstruction procedures?

A. DIEP based on deep inferior epigastric vessels

B. TRAM based on superior gluteal vessels

C. Gluteal flap based on thoracodorsal artery

D. Latissimus dorsi flap based on the inferior epigastric artery

Correct answer: A

Autologous breast reconstruction uses the patient's own tissue to create a new breast mound. One of the most advanced and commonly used techniques is the Deep Inferior Epigastric Perforator (DIEP) flap. This is a free flap procedure where a segment of skin and subcutaneous fat from the lower abdomen is harvested to create the breast. The key to this flap is its blood supply, which is based on one or more perforating arteries that arise from the deep inferior epigastric artery and vein. The vessels are carefully dissected and then microsurgically anastomosed to recipient vessels in the chest (e.g., the internal mammary artery). The DIEP flap is considered a muscle-sparing flap because it does not sacrifice the rectus abdominis muscle, unlike the older TRAM flap, leading to less abdominal wall morbidity. The other options incorrectly match the flap with its blood supply.

Question 187. A 0-year-old man develops cramp-like pain in the gluteal region after walking approximately 00 meters. Which blood vessel is most likely responsible for this condition?

A. Arterial disease with aortoiliac involvement

B. Arterial disease with femoral artery involvement

C. Femoral venous insufficiency

D. None

Correct answer: A

The patient is describing intermittent claudication, which is ischemic muscle pain caused by peripheral artery disease. The location of the claudication provides a strong clue to the anatomical level of the arterial occlusion. Pain in the buttocks, hips, or thighs that is induced by walking is characteristic of stenosis or occlusion in the aortoiliac segment. This condition, often referred to as Leriche syndrome when it involves the aortic bifurcation, restricts blood flow to the gluteal muscles and the entire lower limb. Claudication that is primarily located in the calf would suggest disease in the femoropopliteal segment. In a young patient like this, the cause may be an accelerated atherosclerosis (e.g.,

Question 188. What is the most common pancreatic endocrine neoplasm?

A. Insulinoma

B. Gastrinoma

C. VIPoma

D. Glucagonoma

Correct answer: A

Pancreatic neuroendocrine tumors (PNETs) are rare tumors that can be functional (hormone-secreting) or non-functional. Among the functional PNETs, the most common type is

the insulinoma. Insulinomas are tumors of the pancreatic beta cells that autonomously secrete excessive amounts of insulin. This leads to inappropriate hyperinsulinemia, which causes recurrent episodes of hypoglycemia, particularly during fasting or after exercise. The clinical presentation is characterized by Whipple's triad : symptoms of hypoglycemia (e.g., confusion, sweating, palpitations), a documented low plasma glucose level during the episode, and relief of symptoms upon administration of glucose. The vast majority (>90%) of insulinomas are benign and solitary. Gastrinomas are the second most common functional PNET, but they are more often located in the duodenum than the pancreas itself.

Question 189. An elderly man presents with a long-standing facial mole that has recently enlarged and developed irregular margins. What is the most probable diagnosis?

A. Superficial spreading melanoma

B. Lentigo maligna

C. Acral melanoma

D. Nodular melanoma

Correct answer: B

The clinical description of a long-standing pigmented lesion on the chronically sun-exposed skin of an elderly individual (the face) that is now showing changes (increasing size, irregular borders) is the classic presentation

Question 190. In a child with respiratory distress syndrome (RDS), which type of cells are primarily defective or dysfunctional?

A. Type 1 pneumocytes

B. Type 2 pneumocytes

C. Bronchial epithelium

D. None

Correct answer: B

Neonatal Respiratory Distress Syndrome (NRDS), also known as hyaline membrane disease, is a condition primarily affecting premature infants. The underlying cause is a developmental deficiency in the production of pulmonary surfactant. Surfactant is a complex lipoprotein mixture that lines the alveoli, reduces surface tension, and prevents the air sacs from collapsing at the end of expiration. The synthesis, storage (within lamellar bodies), and secretion of this crucial substance are the specific functions of Type II pneumocytes. These are cuboidal epithelial cells interspersed among the much larger Type I pneumocytes. In premature infants, the Type II pneumocytes are immature and have not yet developed the capacity to produce and secrete adequate amounts of surfactant. This deficiency leads to widespread atelectasis, decreased lung compliance, and severe respiratory distress. Type I pneumocytes (A) are the thin, flat cells

Question 191. What is the underlying cause of greenish-black stools observed in a newborn?

A. Biliverdin

B. Bilirubin

C. Urochrome

D. Stercobilin

Correct answer: A

The greenish-black stool passed by a newborn is called meconium, which is typically passed within the first 24–48 hours after birth. Meconium is thick, sticky, and dark green to black in color.The characteristic greenish color of meconium is mainly due to the presence of biliverdin, a green bile pigment. Biliverdin is formed from the breakdown of hemoglobin during the metabolism of red blood cells. This pigment mixes with other substances such as intestinal secretions, bile salts, mucus, epithelial cells, lanugo hair, and swallowed amniotic fluid, giving meconium its typical appearance.The other options are incorrect because:1. Bilirubin is a yellow pigment formed after biliverdin reduction and mainly contributes to the yellow color of normal stools later in life.2. Urochrome gives urine its yellow color.3. Stercobilin is responsible for the brown color of normal adult feces, formed from bilirubin metabolism in the intestine.Therefore, the greenish-black color of newborn stool (meconium) is mainly due to biliverdin.

Question 192. A full-term, breast fed newborn is found to have a serum bilirubin level of 4 mg/dL. What is the most appropriate management in this situation?

A. Exchange transfusion

B. Continue to breast feed

C. Phototherapy

D. None

Correct answer: C

The management of neonatal hyperbilirubinemia is guided by the infant's age in hours, gestational age, and the presence of risk factors, using standardized nomograms (like the Bhutani

Question 193. A -year-old child is found to weigh . kg and has severe anemia with a hemoglobin level of g/dL, total serum protein of g/dL, low albumin levels, and abdominal distension, with no evidence of proteinuria. What is the most likely diagnosis?

A. Marasmus

B. Kwashiorkor

C. Indian childhood cirrhosis

D. None

Correct answer: B

This child's presentation is classic for kwashiorkor, a form of severe acute malnutrition. The key features are the low total protein and

Question 194. Which chromosomal karyotype is typically associated with true hermaphroditism?

A. 45 XO streak gonads

B. 46 XX Ovotestis

C. 47 XY+9

D. 47 XX

Correct answer: B

True hermaphroditism, now more appropriately termed ovotesticular disorder of sex development (DSD), is a rare condition defined by the histological presence of both ovarian tissue (containing follicles) and testicular tissue (containing seminiferous tubules) in the same individual. These tissues may be combined in a single gonad, known as an ovotestis, or the person may have a separate ovary and testis. While several different karyotypes can be associated with this condition, the most common karyotype found in individuals with ovotesticular DSD is 46,XX, accounting for approximately 60% of cases. The development of testicular tissue in a 46,XX individual is often due to the translocation of the SRY (sex-determining region Y) gene onto an X chromosome or an autosome, or mutations in other genes involved in the sex determination pathway. 45,XO (A) is the karyotype for Turner syndrome.

Question 195. An APGAR score of at minute indicates :

A. Mildly depressed

B. Further resuscitation not needed

C. Severely depressed

D. Normal

Correct answer: C

The APGAR score is a rapid assessment tool used to evaluate the clinical status of a newborn infant at 1 and 5 minutes after birth. It scores five parameters (Appearance, Pulse, Grimace, Activity, Respiration) on a scale of 0 to 2 each, for a maximum total score of 10. The score is used to guide the need for resuscitation. A score is interpreted as follows :7-10 : Normal / Good condition. The infant is adapting well.4-6 : Mildly to moderately depressed. The infant may require some assistance, such as stimulation and supplemental oxygen.0-3 : Severely depressed. The infant is in critical condition and requires immediate and intensive resuscitation, including positive pressure ventilation and possibly chest compressions and medications.An APGAR score of 3 at 1 minute clearly indicates that the neonate is severely depressed and in urgent need of life-saving resuscitation measures to support their breathing and circulation.

Question 196. A woman reports nocturnal leg pain accompanied by a crawling or uncomfortable sensation and has a clinical diagnosis of restless leg syndrome. What is the drug of choice for her treatment?

A. Pramipexole

B. Gabapentin

C. Vitamin B12

D. Iron tablets

Correct answer: A

Restless Legs Syndrome (RLS), also known as Willis-Ekbom disease, is a neurological sensorimotor disorder. Its pathophysiology is strongly linked to dysfunction in the central dopaminergic pathways, as well as impaired iron metabolism in the brain. For patients with persistent, moderate-to-severe RLS that is not caused by a correctable underlying condition (like iron deficiency), the first-line pharmacological treatment is a low dose of a dopamine agonist. Pramipexole and ropinirole are non-ergot dopamine agonists that are highly effective in controlling the symptoms of RLS and are considered drugs of choice for initiating therapy. They are typically taken 1-3 hours before bedtime to manage the characteristic nocturnal symptoms. While alpha-2-delta ligands like gabapentin (B) are also effective and are considered an alternative first-line or second-line option, dopamine agonists are the classic first-line treatment. Correcting any underlying iron deficiency (D) is also a crucial part of management.

Question 197. A patient presents with arthritis affecting the first carpometacarpal (CMC) joint along with the proximal and distal interphalangeal (PIP and DIP) joints, while the wrist and ankle joints are spared. What is the most likely diagnosis?

A. Osteoarthritis

B. Rheumatoid arthritis

C. Psoriatic arthritis

D. Gout

Correct answer: A

This pattern of joint involvement is highly characteristic of osteoarthritis (OA), particularly the nodal form seen in hands. Osteoarthritis

Question 198. A 2-year-old child is admitted to the ICU two days after a traumatic injury involving a femur fracture and subsequently develops severe hypoxemia (PaO_2 0 mmHg despite 00% oxygen via a rebreather mask), with a normal chest X-ray and confusion. What is the most likely diagnosis?

A. Radial head fracture

B. Pulled elbow

C. Supracondylar fracture

D. Elbow dislocation

Correct answer: B

A 4-year-old child who develops sudden pain after being lifted or swung by the hand — followed by refusal to move the elbow and keeping it slightly flexed and pronated (or extended) — is a classic presentation of pulled elbow, also known as nursemaid's elbow or radial head subluxation.This injury occurs when longitudinal traction is applied to the forearm while the elbow is extended and pronated, causing the annular ligament to slip over the radial head and become trapped in the joint.Children aged 1–5 years are particularly susceptible because their ligaments are lax and the radial head is not yet fully developed.There is no swelling or deformity, unlike fractures or dislocations. Reduction is achieved by supination and flexion of the forearm, leading to immediate pain relief and return of normal movement.Hence, the most likely diagnosis is Pulled elbow (Option B).

Question 199. A woman who is weeks pregnant reports accidental exposure to X-ray radiation. What is the appropriate course of management?

A. Continue the pregnancy

B. Terminate the pregnancy

C. Chromosome analysis

D. Pre-invasive diagnostic testing

Correct answer: A

The management of radiation exposure during pregnancy depends on the gestational age and the estimated fetal dose. Teratogenic effects of radiation are dose-dependent. The threshold dose for causing deterministic effects like malformations or growth restriction is generally considered to be in the range of 5 to 10 rads (0.05 to 0.1 Gray). A single diagnostic X-ray procedure (e.g., a chest X-ray or an extremity X-ray) delivers a fetal radiation dose that is extremely low, typically in the millirad range, which is thousands of times lower than the threshold for harm. Even a CT scan of the abdomen or pelvis delivers a dose that is usually below this threshold. Therefore, for an accidental exposure to a standard diagnostic X-ray, the radiation dose to the fetus is negligible and does not increase the risk of adverse outcomes above the baseline population risk. The appropriate management is to reassure the patient and continue the pregnancy with routine antenatal care.

Question 200. A 2-year-old woman presents with absence of menstruation for 5 months following childbirth, along with fatigue and weight gain, and has a history of severe postpartum hemorrhage requiring blood transfusion. Laboratory evaluation reveals deficiencies in multiple pituitary hormones. Which diagnosis best explains these findings?1. Serum LH < 1 lU /L trcrmal,4-24 lU /L)2. Serum estradiol S pg/ml fnormal,20 - 100 pg/ml)3. Serum TSH 0.1 mU/L [normal,0.5 - 5 mU/LJ4. Serum GH 3 ng/ml (normal, < 5 ng/ml)5. Serum ACTH 28 pg/ml (normal, 10 - 50 pg/mL)Serum prolactin 2 ng/ml (normal, Injection of 500 mg of TRH failed to produce the expected

rise in both serum TSH and prolactin. Which of the followlng diagnoses most likely explains the findings in this patient?

A. Hashimoto's thyroiditis

B. Isolated gonadotropin deficiency

C. Primary amenorrhea

D. Sheehan's syndrome

Correct answer: D

This is a classic presentation of Sheehan's syndrome, which is postpartum hypopituitarism. The syndrome is caused by ischemic necrosis of the pituitary gland, which is precipitated by severe hypotension or shock, most commonly due to a massive postpartum hemorrhage. The pituitary gland normally enlarges during pregnancy, making it more vulnerable to ischemia. The patient's history of PPH requiring a transfusion is the key precipitating event. The clinical manifestations are due to the deficiency of various anterior pituitary hormones. Her amenorrhea and low estradiol are due to gonadotropin (LH, FSH) deficiency. Her fatigue and weight gain, along with a low TSH, are due to secondary hypothyroidism. The failure of prolactin to rise after TRH stimulation is also indicative of pituitary damage. This global loss of anterior pituitary function following a postpartum hemorrhage is the definition of Sheehan's syndrome.

Question 201. When does meiosis occur?

A. Adult ovary

B. Prepubertal testis

C. At birth in ovary

D. All

Correct answer: A

No explanation is available for this recall question yet.

Question 202. A sexually active woman presents with copious, frothy, foul-smelling vaginal discharge accompanied by severe itching, and examination reveals a strawberry cervix. What is the most likely diagnosis?

A. Trichomonas vaginalis

B. Bacterial vaginosis

C. Candidiasis

D. None

Correct answer: A

This constellation of signs and symptoms is pathognomonic for trichomoniasis, a sexually

Question 203. A 3-year-old woman has been experiencing heavy menstrual bleeding for the past six months, with no abnormal findings on clinical examination and a normal ultrasound. After failure of initial non-hormonal treatment, what should be

the next step in management?

A. Hormonal therapy

B. Endometrial sampling

C. Hysterectomy

D. Uterine artery ligation

Correct answer: A

This patient has abnormal uterine bleeding (AUB), specifically heavy menstrual bleeding. Since physical examination and ultrasound are normal, structural causes like large fibroids or polyps are unlikely, suggesting a diagnosis of AUB-O (ovulatory dysfunction) or AUB-E (endometrial). Non-hormonal therapies, such as NSAIDs or tranexamic acid, are often the first-line medical treatment. Since these have failed, the next appropriate step in management is to initiate hormonal therapy. Hormonal options are highly effective for controlling heavy menstrual bleeding. The most common and effective choices include combined oral

Question 204. In a postmenopausal woman, which medication is considered the first-line treatment for osteoporosis?

A. OCP (Oral Contraceptive Pills)

B. Bisphosphonates

C. Raloxifene

D. Strontium

Correct answer: B

Postmenopausal osteoporosis is a common condition characterized by low bone mass and microarchitectural deterioration, leading to an increased risk of fragility fractures. For the pharmacological treatment of this condition, oral bisphosphonates are universally recommended as the first-line therapy. This class of drugs, which includes alendronate, risedronate, and ibandronate, works by inhibiting osteoclast-mediated bone resorption. By binding to the bone mineral surface and being ingested by osteoclasts, they disrupt their function and induce apoptosis, thereby slowing down the rate of bone turnover and leading to an increase in bone mineral density. They have been extensively studied and have been proven to significantly reduce the risk of vertebral, non-vertebral, and hip fractures. Raloxifene (C), a SERM, is a second-line option. OCPs (A) are not used in postmenopausal women. Strontium ranelate (D) is not a first-line agent due to safety concerns.

Question 205. When is prolactin secreted at its maximum level?

A. 24 hrs after delivery

B. REM sleep

C. 2 hrs running

D. 24 hours after ovulation

Correct answer: A

No explanation is available for this recall question yet.

Question 206. A woman who had a home delivery complicated by a complete perineal tear presents to the hospital two weeks postpartum. What is the preferred approach to management?

A. Immediate repair

B. Repair 3 weeks post-delivery

C. Repair 6 weeks post-delivery

D. Repair 3 months post-delivery

Correct answer: D

A complete perineal tear (third or fourth-degree) is a significant obstetric injury involving the anal sphincter complex. The ideal management is primary repair immediately after delivery. However, when a patient presents with a missed or broken-down repair two weeks after delivery, immediate re-repair is contraindicated. At this stage, the tissues are edematous, friable, and often infected, making a successful repair very unlikely to heal properly. The standard approach in this situation is a delayed secondary repair. The wound is managed with local care, sitz baths, and antibiotics if needed, and the patient is allowed to heal by secondary intention. The definitive surgical repair is then performed after a period of at least 3 months postpartum. This delay allows the inflammation to completely subside, the tissues to become supple and well-vascularized, and the scar to mature, which provides the best possible conditions for a

Question 207. Which of the following is not used for postcoital contraception?

A. CuT

B. Ru 486

C. High dose estrogen

D. Danazol

Correct answer: D

Postcoital contraception, or emergency contraception (EC), is used to prevent pregnancy after unprotected intercourse. Several methods are approved and effective. The most effective method is the insertion of a Copper T IUD (CuT) within 5 days of intercourse. Hormonal methods include levonorgestrel-only pills (the morning-after pill), ulipristal acetate, and the Yuzpe regimen, which involves a combination of high-dose estrogen and progestin. Mifepristone (RU-486), a progesterone receptor modulator, is also highly effective as an emergency contraceptive. In contrast, Danazol is a synthetic steroid with weak androgenic properties that is used to treat conditions like endometriosis and fibrocystic breast disease. While it has been studied in the past for EC, it is less effective than other available methods and is not a standard or recommended option for postcoital contraception in current clinical practice.

Question 208. In contemporary obstetric practice, what is the most appropriate method for assessing the condition of a sensitized Rh-negative mother?

A. MCA Doppler peak systolic volume

B. Fetal blood

C. Amniocentesis

D. Biophysical profile

Correct answer: A

In an Rh-sensitized pregnancy, maternal anti-D antibodies cross the placenta and destroy fetal red blood cells, leading to fetal anemia. The severity of this anemia must be monitored to guide interventions like intrauterine transfusions. In modern obstetrics, the best and standard method for non-invasively assessing the degree of fetal anemia is by measuring the Peak Systolic Velocity (PSV) of the fetal

Question 209. In a 8-week gestation with dichorionic diamniotic twins, where the first twin is in breech presentation and the mother has a blood pressure of 40/6 mmHg with + proteinuria, what is the appropriate management approach?

A. Immediate LSCS

B. Induction at 40 weeks

C. Immediate induction and delivery

D. Induction if signs of preeclampsia

Correct answer: A

This patient has two significant issues that guide management. First, she is at term (38 weeks) with an uncomplicated dichorionic-diamniotic (DCDA) twin pregnancy, which is the appropriate time for delivery. The presenting twin (Twin 1) is in a breech presentation. A planned vaginal delivery is contraindicated when the first twin is breech due to the high risk of complications like head entrapment and cord prolapse. This is a clear indication for a planned cesarean section. Second, the mother

Question 210. A woman who is currently 6 weeks pregnant has a history of a previous twin delivery. What would be her correct obstetric score?

A. G2P1

B. G2P2

C. G3P2

D. G3P3

Correct answer: A

The obstetric score is described using the gravida and para system.Gravida (G) refers to the total number of times a woman has been pregnant, including the current pregnancy, regardless of the outcome. This woman had a previous twin pregnancy (one pregnancy) and is currently pregnant at 36 weeks (a second pregnancy). Therefore, her gravida is 2 (G2).Para (P) refers to

the number of past pregnancies that have been carried beyond the period of viability (usually 20-24 weeks), regardless of the number of fetuses delivered. The previous twin pregnancy counts as one parous event.Therefore, her correct obstetric score is G2P1. The number of babies delivered in a single pregnancy does not change the para count; a twin or triplet delivery still counts as P1.

Question 211. Misoprostol, when used for induction of labor, is an analogue of which prostaglandin?

A. PG E1

B. PG E2

C. PG 12

D. PG F2alpha

Correct answer: A

No explanation is available for this recall question yet.

Question 212. A 6-year-old girl presents with primary amenorrhea accompanied by cyclical lower abdominal pain, a midline abdominal mass, and a bulging vaginal mass felt on rectal examination. What is the most likely diagnosis?

A. Imperforate hymen

B. Transvaginal septum

C. Vaginal agenesis

D. MRKH (Mayer-Rokitansky-Küster-Hauser syndrome)

Correct answer: A

This is a classic presentation of an imperforate hymen. The patient has normal ovarian function, leading to regular hormonal cycles and menstrual bleeding. However, the imperforate hymen acts as a complete obstruction at the

Question 213. Which of the following pubertal changes does not depend on estrogen?

A. Hair growth

B. Menstruation

C. Vaginal cornification

D. Cervical mucus

Correct answer: A

Puberty in females is driven by hormones from both the ovaries (estrogen) and the adrenal glands (androgens). Estrogen is responsible for the development of most female secondary sexual characteristics. It stimulates breast development (thelarche), growth of the uterus, cornification of the vaginal epithelium, and the production of thin, watery cervical mucus. The cyclical withdrawal of estrogen and progesterone is what leads to menstruation (menarche). In

contrast, the growth of pubic and axillary hair (pubarche or adrenarche) is an androgen-dependent process. These androgens are primarily produced by the adrenal glands. Therefore, hair growth is not directly dependent on estrogen and is mediated by a different hormonal pathway during puberty.

Question 214. What is the most common site for fertilization?

A. Ampulla

B. Isthmus

C. Intramural

D. Fimbriae

Correct answer: A

The fallopian tube (or oviduct) is divided into four parts : the fimbriae, the infundibulum, the ampulla, and the isthmus. After ovulation, the oocyte is captured by the fimbriae and transported into the fallopian tube. Sperm travel from the vagina, through the uterus, and into the fallopian tubes. Fertilization, the fusion of the sperm and the oocyte, most commonly occurs in the ampulla of the fallopian tube. The ampulla is the widest and longest portion of the tube, providing an ideal environment for fertilization to take place. After fertilization, the resulting zygote begins to divide and travels down the rest of the fallopian tube over the next several days, eventually reaching the uterine cavity where it will implant. The isthmus is the narrow portion of the tube adjacent to the uterus, and the fimbriae are the finger-like projections at the ovarian end.

Question 215. What is the most suitable uterine distension medium to be used during hysteroscopy when bipolar cautery is employed?

A. Glycine

B. NS (Normal Saline)

C. CO_2

D. Dextran 70

Correct answer: B

Hysteroscopy requires the use of a distension medium to expand the uterine cavity for visualization. The choice of medium depends on the type of electrosurgical energy being used. When using mono polar cautery, a non-electrolyte, non-conductive medium (such as glycine, sorbitol, or mannitol) must be used to prevent the dispersal of the electrical current. However, these hypotonic fluids carry the risk of systemic absorption, leading to hyponatremia and fluid overload. In contrast, bipolar cautery systems contain both the active and return electrodes within the instrument itself, so the current does not pass through the patient's body. This makes it safe to use an electrolyte-containing, conductive medium. The most appropriate and commonly used distension medium for operative hysteroscopy with bipolar energy is an isotonic electrolyte solution, such as Normal Saline (0.9% NaCl) or Ringer's lactate.

Question 216. What is the best treatment option for a septate uterus?

A. Tompkins Metroplasty

B. Jones Metroplasty

C. Strassmann Metroplasty

D. Transcervical hysteroscopic resection of the septum

Correct answer: D

A septate uterus is a congenital Müllerian anomaly that is a common cause of recurrent pregnancy loss. The gold standard and best treatment option for a symptomatic uterine septum is transcervical hysteroscopic resection of the septum (also known as hysteroscopic metroplasty). This is a minimally invasive surgical procedure. A hysteroscope is passed through the cervix into the uterine cavity,

Question 217. A pregnant woman with meconium-stained amniotic fluid underwent an emergency lower segment cesarean section. A few days later, her clinical condition worsened, and ultrasound revealed edematous bowel loops. What is the most likely underlying cause?

A. Meconium peritonitis

B. Paralytic ileus

C. Adhesive intestinal obstruction

D. Intra-abdominal abscess

Correct answer: A

This question describes a neonate, not the mother. The history of meconium-stained liquor suggests fetal distress and is a risk factor for meconium-related complications. Meconium peritonitis is a sterile, chemical peritonitis that results from a perforation of the intestine in utero. The perforation allows sterile meconium to leak into the peritoneal cavity, where it elicits an intense inflammatory response. This can lead to the formation of ascites, calcifications, and the development of meconium pseudocysts. After birth, the infant may present with signs of intestinal obstruction, such as abdominal distension, vomiting, and failure to pass meconium. An ultrasound showing edematous bowel loops, ascites, and possibly intra-abdominal calcifications would be consistent with this diagnosis. The other options are general post-operative complications, but meconium peritonitis is a specific neonatal condition linked to the history.

Question 218. An 8-year-old girl presents with amenorrhea for six months along with low-grade fever, weight loss, abdominal pain, and generalized weakness. Per rectal examination reveals a palpable pelvic mass on the left side. What is the most likely diagnosis?

A. Fibroid with degeneration

B. TB pelvis with Tubo-ovarian mass

C. Ectopic pregnancy

D. Granulosa cell tumour

Correct answer: B

This patient's presentation with a combination of constitutional symptoms (low-grade fever, weight loss, weakness), menstrual irregularity (amenorrhea), chronic abdominal pain, and a palpable pelvic mass is highly suggestive of genitopelvic tuberculosis. Tuberculosis of the female genital tract most commonly affects the fallopian tubes (salpingitis), followed by the endometrium and ovaries. The infection is usually secondary to a primary focus elsewhere, often in the lungs. Chronic inflammation can lead to caseation, fibrosis, and the formation of complex adnexal masses, such as a tubo-ovarian mass, which would be palpable on examination. Endometrial involvement can destroy the basal layer, leading to amenorrhea (Asherman's syndrome). The constellation of chronic systemic symptoms with pelvic findings in a young patient, particularly in an endemic country like India, makes tuberculosis the most likely diagnosis. An ectopic pregnancy would present more acutely.

Question 219. In early pregnancy, which clinical sign is characterized by the examiner being able to feel the cervix and the enlarged uterine body as separate structures due to softening of the uterine isthmus at around – weeks of gestation?

A. Goodell's sign

B. Chadwick's sign

C. Piskacek's sign

D. Hegar's sign

Correct answer: D

Hegar's sign is a classic clinical sign of early pregnancy, typically elicitable between 6 and 8 weeks of gestation. It is a finding on bimanual pelvic examination. Due to the effects of pregnancy hormones, the uterine isthmus (the portion between the cervix and the uterine body) becomes extremely soft. When the examiner places two fingers in the anterior vaginal fornix and the other hand on the abdomen over the uterus, the softened isthmus is so compressible that the cervix and the body of the uterus feel like two separate structures. This sensation of the compressibility and softening of the isthmus is Hegar's sign. Goodell's sign (A) is the softening of the cervix itself. Chadwick's sign (B) is the bluish discoloration of the vagina and cervix due to venous congestion. Piskacek's sign (C) is an asymmetrical enlargement of the uterus if implantation is cornual.

Question 220. A newborn is delivered with the body covered by a thick, membranous layer. What is the most likely diagnosis?

A. Lamellar ichthyosis

B. X-linked ichthyosis

C. Ichthyosis Vulgaris

D. Ichthyosis Acquista

Correct answer: A

A newborn who is born encased in a tight, shiny, translucent membrane resembling a collodion or parchment is known as a collodion baby. This presentation is not a final diagnosis but is the initial manifestation of several underlying forms of congenital ichthyosis. This membrane is the stratum corneum, which is shed over the first few weeks of life to reveal the underlying skin condition. The most common disorder that presents as a collodion baby is autosomal recessive congenital ichthyosis, of which lamellar ichthyosis is a major subtype. In lamellar ichthyosis, after the collodion membrane sheds, the infant is left with large, dark, plate-like scales covering the entire body, often with associated ectropion (outward turning of the eyelids). X-linked ichthyosis and ichthyosis vulgaris present later and do not have a collodion membrane at birth.

Question 221. A patient with cancer is receiving radiotherapy. Which statement correctly describes the radiosensitivity of different tissues?

A. Rapidly dividing cells are resistant to radiation

B. Gl mucosa is one of the most radioresistant tissues in the body

C. The intensity of radiation is inversely proportional to the square of distance from the source

D. Small blood vessels are least resistant to radiation

Correct answer: C

This question tests fundamental principles of radiobiology and physics. The correct statement is an expression of the Inverse Square Law, a key principle in physics. It states that the intensity of a physical quantity like radiation emanating from a point source is inversely proportional to the square of the distance from that source. This means if you double the distance from a radiation source, the dose you receive will decrease by a factor of four ($1/2^2$). This law is critical in radiotherapy for calculating tumor and normal tissue doses and for radiation protection. The other statements are false. According to the Law of Bergonié and Tribondeau, rapidly dividing cells are the most radiosensitive, not resistant (A). The gastrointestinal (GI) mucosa is a rapidly renewing tissue and is therefore highly radiosensitive, not radioresistant (B). Small blood vessels contain sensitive endothelial cells, making them quite susceptible to radiation damage, not least resistant (D).

Question 222. A patient presents with recurrent falls, noticeable behavioral changes, and episodes of urinary incontinence. What condition is most likely associated with this presentation?

A. Frontotemporal dementia

B. Normal pressure hydrocephalus

C. Parkinson's disease

D. Alzheimer's disease

Correct answer: B

The clinical triad of gait disturbance, cognitive impairment, and urinary incontinence is the classic presentation of Normal Pressure Hydrocephalus (NPH). The symptoms described in the question map directly onto this triad :1. Gait disturbance : The patient frequently falls, which is characteristic of the magnetic, shuffling, broad-based gait seen in NPH. This is often the earliest and most prominent symptom.2. Cognitive impairment : The patient exhibits behavioral changes, which reflects the dementia of NPH, typically characterized by psychomotor slowing, apathy, and executive dysfunction.3. Urinary incontinence : The patient experiences enuresis (urinary incontinence), which is usually a late finding and is often characterized by urgency and frequency before progressing to frank incontinence.This classic triad is often remembered by the mnemonic wet, wobbly, and wacky. NPH is an important diagnosis to consider because it

Question 223. A patient being treated for depression with imipramine for two weeks is observed by relatives to have increased excitement, excessive talking, and a tendency to wear brightly colored clothes. What should be the next step in management?

A. Antipsychotic with Imipramine continued

B. Discontinue Imipramine and start Valproate

C. Continue Imipramine alone

D. Manage with Valproate alone

Correct answer: B

This patient was initially diagnosed with depression but has now developed symptoms of hypomania or mania after starting an antidepressant (imipramine). The increased excitement, flamboyant clothing, and pressured speech (increased talking) are characteristic of a manic switch. This scenario strongly suggests that the patient's underlying diagnosis is not unipolar depression but rather bipolar disorder. Antidepressants, when given as monotherapy to a patient with bipolar disorder, can precipitate a switch from a depressive episode into a manic or hypomanic episode. The correct management in this situation is to discontinue the offending agent (imipramine), as it is fueling the mania. The next step is to initiate treatment with a mood stabilizer, such as valproate, lithium, or an atypical antipsychotic, to control the acute manic symptoms and provide long-term mood stability.

Question 224. A patient has been experiencing depressive symptoms for six months and, during the past two weeks, has developed auditory hallucinations. What is the most probable diagnosis?

A. Psychotic depression

B. Schizoaffective disorder

C. Mania depressive illness

D. Schizophrenia

Correct answer: A

The diagnosis here depends on the timing of the mood and psychotic symptoms. The patient has had a clear depressive episode for 6 months, and the psychotic symptoms (auditory hallucinations) have only appeared recently,

Question 225. Which is the most common drug causing dependence?

A. Cannabis

B. Cocaine

C. Heroin

D. Amphetamine

Correct answer: A

When considering the most common drug causing dependence, it is important to look at the overall prevalence of use and the number of people who meet the criteria for a substance use disorder (dependence). While opioids like heroin and stimulants like cocaine and amphetamines have a very high potential for causing severe physiological and psychological dependence in their users, their overall prevalence of use in the general population is much lower than that of cannabis. Cannabis is one of the most widely used illicit substances globally. Because of its widespread use, even though its dependence potential per user might be lower than that of heroin, the sheer number of users means that a larger absolute number of people develop a cannabis use disorder (dependence). Therefore, in terms of the total number of individuals affected by dependence worldwide, cannabis is often cited as the most common illicit drug.

Question 226. An MBBS student presents with sudden choking sensation, shortness of breath, chest tightness, anxiety, and a feeling of impending doom, with normal findings on systemic examination. What is the most likely diagnosis?

A. Panic attack

B. Depression

C. Epilepsy

D. Asthma

Correct answer: A

The student is describing a classic panic attack. A panic attack is a discrete episode of intense