NEET PG 2024 Shift I Solution Set

Ques 1. Male not responding to O2, diagnosis ARDS. What is the role of IL-8 in ARDS ?

A. Endothelial cell activation
B. Requirement of neutrophil
C. Macrophage activation
D. Promote surfactant production

Ans. B

Solu. The severe lung illness known as Acute Respiratory Distress Syndrome (ARDS) is marked by a sudden and extensive inflammatory response in the lungs. The pathophysiology of ARDS is significantly influenced by interleukin-8 (IL-8).
Role of IL-8 in ARDS:
Neutrophil chemotaxis: Being a strong chemokine, IL-8 draws neutrophils to the area of inflammation. Neutrophils are drawn from the bloodstream into the pulmonary tissue as a result of increased IL-8 levels in the lungs during acute respiratory distress syndrome (ARDS).
Neutrophil Activation: IL-8 also stimulates neutrophils once they have been drawn to the lungs. The release of reactive oxygen species (ROS) and proteolytic enzymes, which are meant to fight infection but may also cause tissue damage, is facilitated by this stimulation of the neutrophils.
Maintaining Inflammation: The inflammatory response in the lungs is maintained in part by IL-8. Prolonged inflammation has the potential to harm the alveolar-capillary barrier, which can then cause pulmonary edema, increased permeability, and the severe hypoxemia characteristic of ARDS.

Ques 2. A pt presents with the finding as shown, What is the best investigation for Wilson?

A. Urine Copper
B. Hepatic copper
C. S. Ceruloplasmin
D. MRI Brain

Ans. B

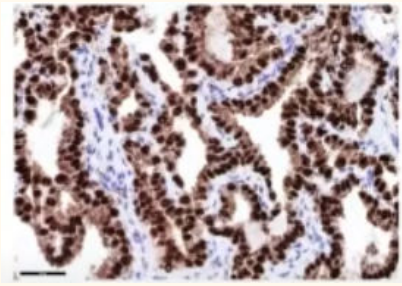
Solu. Role of IL-8 in ARDS:
Neutrophil chemotaxis: Being a strong chemokine, IL-8 draws neutrophils to the area of inflammation. Neutrophils are drawn from the bloodstream into the pulmonary tissue as a result of increased IL-8 levels in the lungs during acute respiratory distress syndrome (ARDS).

Neutrophil Activation: IL-8 also stimulates neutrophils once they have been drawn to the lungs. The release of reactive oxygen species (ROS) and proteolytic enzymes, which are meant to fight infection but may also cause tissue damage, is facilitated by this stimulation of the neutrophils.

Maintaining Inflammation: The inflammatory response in the lungs is maintained in part by IL-8. Prolonged inflammation has the potential to harm the alveolar-capillary barrier, which can then cause pulmonary edema, increased permeability, and the severe hypoxemia characteristic of ARDS.
Many diagnostic tests can be used to look into Wilson's illness, a condition of copper metabolism. However, hepatic copper content assessment is the most accurate test to confirm Wilson's illness. The main investigations are broken down as follows:
Hepatic Copper Content:
Best Test: Measurement of hepatic copper content via liver biopsy is considered the gold standard for diagnosing Wilson's disease.

Method: A liver biopsy is performed, and the copper content is measured. A hepatic copper concentration >250 µg/g dry weight is diagnostic for Wilson's disease.

Ques 3. Which tumor is positive for TTF-1?



A. Sq
B. Small
C. Adeno Ca
D. Carcinoid

Ans. C

Solu. In lung adenocarcinomas, TTF-1 is commonly positive. It assists in differentiating lung adenocarcinoma from other forms of lung cancer, including TTF-1 negative squamous cell carcinoma.

Ques 4. Vitamin to be supplemented after gastrectomy?

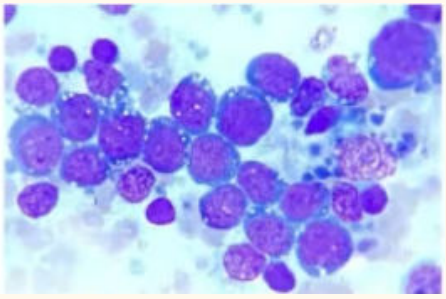
A. Vit A
B. Vit C
C. Vit B12
D. Vit D

Ans. C

Solu. Loss of Intrinsic Factor: The small intestine needs intrinsic factor, a glycoprotein produced in the stomach, in order to absorb vitamin B12.

Following a gastrectomy, there is either no intrinsic factor produced at all or very little, which results in poor vitamin B12 absorption.
Deficiency danger: Patients who do not take supplements run the danger of being deficient in vitamin B12, which can result in neurological problems such as peripheral neuropathy and megaloblastic anemia.

Ques 5. 10/m presents with CERVICAL L. node+, Surface Ig +, CD34-,5-, 23-, tdt - , cd 10+, 19+:



A. Burkitts Lymphoma
B. DLBCL
C. Anaplastic
D. B-ALL

Ans. A

Solu. Your description of the immunophenotypic profile is typical of Burkitt's lymphoma, which is a common high-grade B-cell lymphoma that frequently manifests as extranodal masses or quickly expanding lymph nodes.

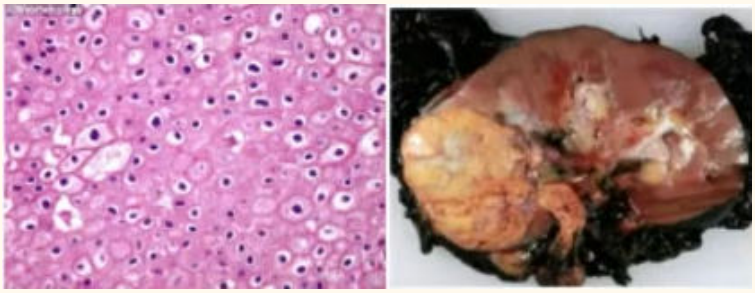
Ques 6. Most common mutation in Papillary cell CA?

A. BRAF V600E
B. RET
C. MET
D. RAS

Ans. A

Solu. BRAF Gene: The MAPK/ERK signaling pathway, which controls cell development, is mediated by a protein that is encoded by the BRAF gene. The BRAF protein is constitutively activated when the valine (V) at position 600 is replaced with glutamic acid (E) due to the V600E mutation.
Prevalence in PTC: Between 40 and 60 percent of papillary thyroid carcinomas have this mutation. It is specifically linked to PTC's classical and tall-cell forms.
Clinical Importance: In PTC, the BRAF V600E mutant is linked to a more aggressive course of the illness, an increased chance of recurrence, and resistance to radioactive iodine therapy.

Ques 7. Renal mass, haematuria, flank pain:

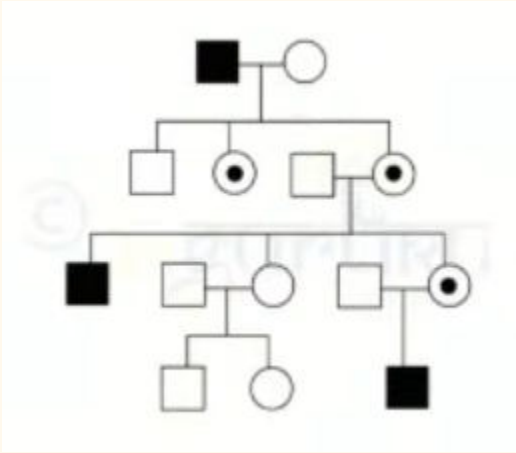


A. Clear cell
B. Papillary
C. Chromophobic
D. Belini

Ans. C

Solu. A variety of renal malignancies, including chromophobe renal cell carcinoma, can present with the triad of renal mass, hematuria, and flank pain. Although ChRCC is a possibility, the most prevalent subtype of RCC, clear cell RCC, is more frequently linked to this clinical presentation. Imaging and histology should be used to confirm the diagnosis.

Ques 8. Which disease will show the following mode of inheritance?



A. Wiskott
B. Wilson
C. Prader willi
D. Achondroplasia

Ans. A

Solu. X-linked Recessive Inheritance: In this pattern, the X chromosome contains the gene that causes the condition. Males will develop the condition if they have one mutant copy of the gene on their X chromosome, as they have one X and one Y chromosome. Because they have two X chromosomes, females are more likely to experience uncommon mutations in both copies of the gene that cause the disease. Rather, females are usually the carriers.
The disorder known as Wiskott-Aldrich syndrome is brought on by mutations in the WAS gene, which produces the WAS protein (WASP). Eczema, thrombocytopenia (low platelet count), and immunodeficiency leading to recurrent infections are the traditional trinity of symptoms that define the illness.

Ques 9. Young Male died during exercise. H/o of similar history in sibling, ON GROSS Morphology: septal thickening was seen. most common cause of death?

A. DCM
B. RCM
C. HOCM
D. Viral Myocarditis

Ans. C

Solu. The genetic disorder known as hypertrophic obstructive cardiomyopathy (HOCM) is characterized by an irregular thickening of the heart muscle, especially the interventricular septum. This thickening may cause potentially fatal arrhythmias by blocking the heart's ability to pump blood out of it.
One of the most frequent causes of sudden cardiac mortality in young athletes, particularly during or right after exercise, is hypoxic oxygen consumption (HOCM). Arrhythmias like ventricular fibrillation are frequently to blame for this.
Family History: A genetic disorder like HOCM is strongly suggested if there is a history of unexpected death in the family, especially in a sibling. Usually, the illness is inherited autosomally dominantly.
Gross Morphology: Asymmetric septal hypertrophy, which can result in left ventricular outflow tract obstruction, is the hallmark feature in HOCM upon gross inspection.

Ques 10. 14. Which is not true?

A. Vwd type 1 is mostly severe ds in children
B. Vwd type 3 mostly severe ds in children
C. Vwd type 2 is more related activity rather than levels
D. Vwd type 3 has severely low VWD

Ans. A

Solu. The most prevalent and typically mildest type of VWD is called type 1, and it is defined by a partial quantitative shortage of von Willebrand factor (vWF).
Symptoms: Individuals suffering from Type 1 VWD frequently encounter mild to severe bleeding symptoms, including nosebleeds, easy bruising, and prolonged bleeding following surgery or injury. Among the affected women, menorrhagia (heavy menstrual bleeding) is prevalent.
Severity in youngsters: Type 1 VWD is often mild in youngsters rather than severe. The majority of kids with Type 1 VWD go on to lead normal lives, and the illness may occasionally be undiscovered until a bleeding incident happens.
Treatment: In more severe cases, especially during surgery or following major trauma, management may incorporate desmopressin (DDAVP) or vWF concentrates.

Ques 11. Child Sun light causes eruptions, diagnosed as DNA repair defect, which defect it can?

A. Nucleotide excision
B. Base excision repair
C. Mismatch repair defect
D. Recombination defect

Ans. A

Solu. The youngster who is diagnosed with a DNA repair deficit and experiences skin eruptions when exposed to sunlight most likely has a disorder associated with Nucleotide Excision Repair (NER) deficiency.
State: Pigmentosa Xeroderma (XP)
Extreme sensitivity to ultraviolet (UV) light is the hallmark of the genetic condition Xeroderma Pigmentosum (XP), which can cause sunburns,

freckles, and an elevated risk of skin cancer. Defects in the nucleotide excision repair process, which fixes UV-induced DNA damage, are the cause of it.
Repairing Nucleotide Excision (NER):
Use: DNA damage produced by UV light and other environmental conditions can be repaired by NER, a system that substitutes and eliminates damaged DNA segments. It entails identifying and removing broken DNA bases, followed by the synthesis of new DNA to replace the damaged segment.

Ques 12. 18/ M Hepatosplenomegaly, Hb7gm%, LN+, WBC 50K, Plat 30, petiche, purpura, fatigue, what is most appropriate management?

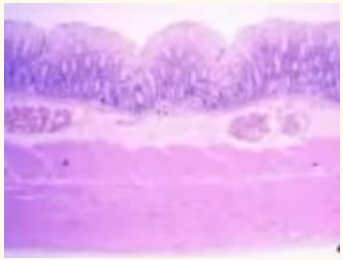
A. Cytarabine + iso
B. IVIG x 2days
C. Prednisolone+ Vinblastine
D. Radiotherapy to LN

Ans. C

Solu. Acute lymphoblastic leukemia (ALL) may be the likely diagnosis in an 18-year-old male patient who presents with hepatosplenomegaly, anemia (Hb 7 g/dL), lymphadenopathy, leukocytosis (WBC 50K), thrombocytopenia (Platelets 30K), petechiae, purpura, and lethargy. Vincristine and prednisolone are suitable parts of the first treatment for ALL (acute lymphoblastic leukemia). Vinblastine is not commonly included in the ALL therapy plan. Based on the patient's unique situation and the institution's treatment guidelines, a customized treatment plan should be developed.

Ques 13. A baby failed to passed meconium, the structures absent in the disease are absent in which of the following layer?

1. Epithelial
2. Submucosa
3. Muscular
4. Serosa



Select the correct answer from the given below cord:
A. 1 n 2
B. 2 n3
C. 3 n 4
D. 1 n 4

Ans. B

Solu. Lack of Ganglion Cells: The submucosa and muscularis propria layers of the colon are devoid of ganglion cells in Hirschsprung's disease.
Submucosa: This layer includes the Meissner's plexus, which controls blood flow and mucosal function. Hirschsprung's disease dysfunction is partly caused by the absence of ganglion cells in this layer.
Muscularis Propria: This layer houses the myenteric plexus, also known as Auerbach's plexus, which is essential for synchronizing the colon's peristaltic movements. Motility is hampered by the lack of ganglion cells in this layer.
There are no ganglion cells in the colon's muscularis propria or submucosa in Hirschsprung's illness. In affected newborns, its absence results in the typical blockage and failure to pass meconium.

Opthalmology

Ques 14. Muscle responsible for ptosis in Horner syndrome:-

A. Orbicularis oculi
B. Levator palpebrae
C. Horner muscle
D. Mullers muscle

Ans. D

Solu. Ptosis, miosis (constricted pupil), and anhidrosis (lack of sweating) on the afflicted side are the classic trifecta of symptoms associated with Horner Syndrome, a disorder caused by disruption of sympathetic nerve pathways.
Muller's Muscle:
Function: In addition to the levator palpebrae superioris muscle's activity, which is regulated by the oculomotor nerve, this muscle also serves to lift the top eyelid by roughly 1-2 mm.
Müller's muscle receives sympathetic nerve fibers via sympathetic innervation. This muscle weakens or paralyzes in Horner syndrome due to a disturbance of sympathetic innervation, which results in mild to moderate ptosis.
The Müller's muscle is the main muscle that causes the ptosis seen in Horner syndrome. The loss of sympathetic nerve input is the cause of this muscle's dysfunction.

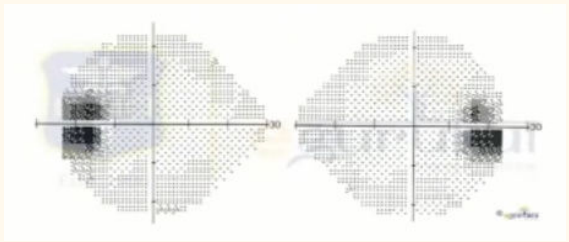
Ques 15. A patient presented to eye Opd after 3 yrs of Cataract surgery. Slit lamp finding was given. What is the likely diagnosis?

A. PCO
B. Bullous keratopathy
C. Phakic glaucoma
D. Lense subluxation

Ans. A

Solu. Secondary cataract, also referred to as posterior capsule opacification (PCO), is a frequent side effect after cataract surgery. It happens when the thin membrane (posterior capsule) that secures the prosthetic lens over time becomes opaque or hazy. This can cause vision to gradually deteriorate as the opacity blocks light from passing through.
Results of Slit Lamp Examination: The posterior capsule behind the intraocular lens appears clouded or opacified during a slit-lamp examination, which is indicative of PCO. The capsule seems milky or fuzzy, even if the lens itself may seem clear.
Symptoms: PCO is characterized by glare, halos surrounding lights, and fuzzy or blurry vision. These symptoms can be confounding to patients because they resemble those that existed before to cataract surgery.

Ques 16. Following perimetry image is suggestive of?

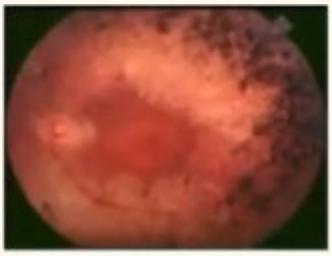


A. Extension of blind spot
B. Arcuate scotoma
C. Reinee step defect
D. Altitude Anopia

Ans. A

Solu. The optic nerve, retina, or intracranial pressure may be affected by underlying medical diseases that are indicated by an expansion or enlargement of the blind spot. Fundoscopy and visual field testing must be performed promptly in order to identify the reason and direct the proper course of treatment.

Ques 17. 4. A patient Came with nyctalopia. Rational image given below what will be the diagnosis?

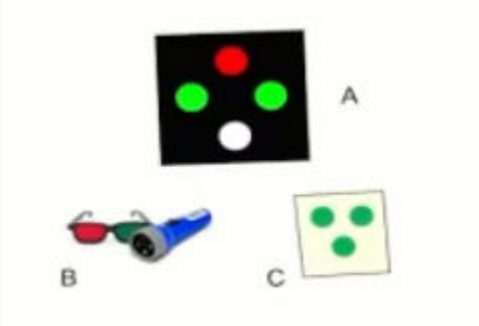


A. Retinitis pigmentosa
B. Vit A deficiency
C. Retinal detachment
D. Diabetic retinopathy

Ans. A

Solu. A degenerative retinal disease called Retinitis Pigmentosa causes night blindness, loss of peripheral vision, and finally impairment of central vision. Although there is no known treatment, there is hope for better results due to improvements in genetic and experimental medicines, as well as supportive management. It is inherited in distinct genetic patterns.

Ques 18. Patient was shown image A along with image B. Image C was visualised. Like diagnosis?



A. Lt eye suppression
B. Rt eye suppression
C. Crossed diplopia
D. Uncrossed diplopia

Ans. B

Solu. Right eye suppression, which is frequently brought on by disorders like strabismus, amblyopia, or notable refractive abnormalities, is the brain's rejection of visual information from the right eye. Restoring balanced binocular vision requires treating the underlying reason with therapy and remedial procedures.

Ques 19. A patient present in eye opd with this finding what is:

A. Dermoid
B. Lipodermoid
C. Pterygium

D. Papilloma

Ans. A

Solu. A benign cystic lesion consisting of ectodermal components, such as skin and hair, is called a dermoid. Congenital in nature, they can arise in several parts of the body, usually in the vicinity of the eyes, ovaries, or brain. The usual course of treatment for symptomatic cysts is surgical excision; asymptomatic cysts may occasionally be watched.

Ques 20. . In Wilson disease. Best Choice of Investigation is?

A. Serum copper
B. Ceruloplasmin
C. Hepatic copper estimation
D. Urine copper

Ans. B

Solu. The most effective initial test for examining Wilson's illness is serum ceruloplasmin, which is frequently combined with other tests for a more thorough diagnosis, including 24-hour urine copper and hepatic copper concentration.

Ques 21. Clinical scenario about homocystinuria, which vitamin to be supplemented:

A. Thiamine
B. B6
C. Biotin
D. Pyruvate

Ans. B

Solu. Vitamin B6 (pyridoxine) should be supplemented for a patient with homocystinuria, especially if the condition is pyridoxine-responsive. This supplementation can lower homocysteine levels and enhance the function of enzymes.

Ques 22. A 2 yr old baby presented with vomiting, acidosis, early cataract. Which of the following enzyme is defective:

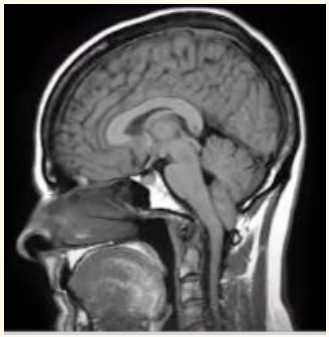
A. Galactose 1 Po4 uridyl transference
B. Galactokinase
C. Hexokinase
D. Aldol reductase

Ans. A

Solu. The most likely diagnosis in a 2-year-old infant exhibiting signs including vomiting, acidosis, and early cataracts is classic galactosemia. In this disorder, galactose-1-phosphate uridyltransferase (GALT) is the malfunctioning enzyme.

Radiology

Ques 23. Diagnosis of MRI image



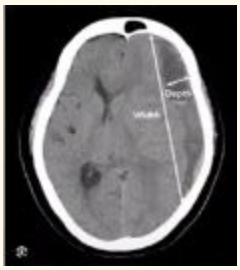
A. Arnold chiari malformation
B. Corpus callosal agenesis
C. Vein of galen Malformation

D. Dandy Walker Malformation

Ans. A

Solu. The MRI image of Arnold-Chiari malformation shows the herniation of cerebellar components into the spinal canal. The cerebellar tonsils' downward displacement and any related disorders, such as hydrocephalus or syringomyelia, are used to corroborate the diagnosis.

Ques 24. A 76 year elderly patient presets in confused state. He is on antihypertensive medication and on aspirin due to previous heart attack. There is a minor traums due to fall from chair 3 weeks back. NCCT is done and show below. Diagnosis?



A. SAH
B. EDH
C. Normal Study
D. Chronic SDH

Ans. D

Solu. The results of the non-contrast CT scan suggest that the 76-year-old patient who has confusion, a history of minor trauma, and aspirin use is most likely suffering from Chronic Subdural Hematoma (SDH). This is a frequent problem among the elderly, and even mild head injuries might cause delayed symptoms to appear.

Ques 25. Diagnosis of MRCP image

A. GB Stone
B. Cholangiocarcinoma
C. Choledochal Cyst
D. Gall and Blood Cancer

Ans. B

Solu. With MRCP, cholangiocarcinoma—a malignant tumor of the bile ducts—can be detected by looking for telltale signs such ductal dilatation, biliary strictures, and perhaps mass lesions. To validate the diagnosis and direct additional treatment, it is crucial to compare these imaging results with the clinical picture.

Ques 26. A 35 year old nullipara female presented with dull aching pain with exacerbation during menstrual cycle. Usg reveals a heterogenous mass in right adnexa. Mri reveals a 4 x 5 cm T1 hyperintense mass with no suppression on fat started images. T2 weighted images show low signal with Dark shading. Diagnosis?

A. Dermoid cyst
B. endometrioma
C. Ovarian cancer
D. Para Ovarian Cyst

Ans. B

Solu. An endometrioma is strongly suggested by the imaging results and the clinical presentation.
Clinical Presentation: Endometriosis, which frequently results in cyclic pelvic pain, is consistent with the patient's dull, aching pain that is worse throughout the menstrual cycle.
Results of Ultrasound (USG): The amorphous lump located in the right adnexa is characteristic of an endometrioma.
MRI Results:
T1 Hyperintensity without Fat Suppression: Because blood products are present, endometriomas usually show up as hyperintensities on T1-weighted images and do not suppress on fat-saturated sequences.
T2 Low Signal with Dark Shading: An endometrioma, which is characterized by persistent hemorrhage within the cyst, is the source of the "shading sign" on T2-weighted imaging.
These results confirm that the diagnosis is an endometrioma.

Ques 27. Diagnosis of following Plain Xray of abdomen

A. Enterolith in jejunum
B. Calcific mediastinal lymph nodes
C. Horse shoe kidney with calculi
D. Chronic calcific pancreatitis

Ans. D

Solu. Long-term pancreatic inflammation that results in irreparable damage is known as chronic calcific pancreatitis (CCP), and symptoms include fibrosis, calcification, and loss of exocrine and endocrine function.
Etiology: Recurrent acute pancreatitis, genetic mutations (e.g., SPINK1, CFTR, PRSS1), persistent alcohol addiction, and idiopathic variables are the most common causes.
Pathophysiology: Pancreatic tissue calcifies and fibroses as a result of persistent inflammation. Diabetes mellitus can result from injury to the islets of Langerhans, whereas the loss of acinar cells lowers the generation of enzymes.
Clinical Presentation: Patients frequently arrive with persistent, back-strapping epigastric pain. Eating usually makes the ache worse. Additional signs and symptoms include diabetes from endocrine insufficiency, malabsorption (steatorrhea), and weight loss from exocrine insufficiency.

Ques 28. A patient has Proteus infection and now plain xray of abdomen was done and a large stone was showm in urinary bladder. Stone is made up of

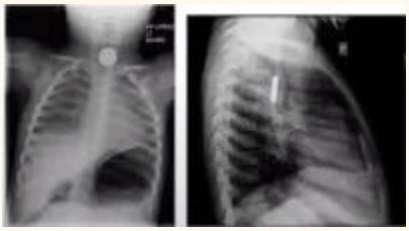
A. Calcium Phosphate
B. Cysteine
C. Calcium Oxalate
D. Xanthine

Ans. A

Solu. A patient with a Proteus infection most usually has a struvite stone in their bladder, which is mainly made of magnesium ammonium phosphate and frequently includes calcium phosphate.
Proteus infection: Urease, an enzyme that converts urea to ammonia, is known to be produced by this kind of bacterial infection. The urine

becomes more alkaline due to the rise in ammonia, which encourages the development of struvite stones.
Stones caused by Struvite: Urease-producing bacteria, like Proteus, are commonly linked to urinary tract infections and stones. Though they can also be discovered in the bladder, the stones are typically big and can form "staghorn" calculi in the kidney.
Composition: The main ingredient in struvite stones is magnesium ammonium phosphate, while mixed forms may also contain calcium phosphate.So, the stone in this case is made up of magnesium ammonium phosphate (struvite), often mixed with calcium phosphate.

Ques 29. Correct statement regarding esophgeal FB



A. Right main bronchus is one of the site of constriction
B. Most common site of imaction is cricopharyngeus
C. Commonly seen in adults
D. Cant cause mediastinitis

Ans. B

Solu. It is true that the cricopharyngeus muscle, which is situated at the level of the upper esophageal sphincter, is the most frequently occurring site of impaction for swallowed foreign materials in the esophagus.The cricopharyngeus muscle, which is a component of the upper esophageal sphincter, naturally narrows the opening to the esophagus. This makes it a frequent location where ingested items can lodge.

Ques 30. Gastrectomy patient needs supplemental: (PART A)

A. Vit c
B. Vit d
C. Vit b12
D. Vit a

Ans. C

Solu. Vitamin B12 Absorption: The body needs the glycoprotein intrinsic factor, which is made by the parietal cells of the stomach, in order to absorb vitamin B12. Following a gastrectomy, the generation of intrinsic factor is considerably decreased or eliminated, particularly if the stomach (partial or entire) is removed.
Consequences: Vitamin B12 cannot be efficiently absorbed in the terminal ileum in the absence of sufficient intrinsic factor, which results in a deficiency. Megaloblastic anemia, neurological problems, and other issues may arise from this.
Supplementation: Patients who have had gastrectomy are usually given vitamin B12 supplementation, which usually takes the form of high-dose oral supplements or intramuscular injections to prevent vitamin B12 insufficiency.
For gastrectomy patients' long-term health and wellbeing, this supplementation is essential.

Ques 31. After a right limb amputation, the patient is experiencing severe pain phantom limb. What is the mechanism behind this?

A. Projection of adjacent fibres to overlap to right sensory cortex
B. Projection of adjacent fibres to overlap to left sensory cortex
C. Expansion of right sensory cortex
D. Expansion of left sensory cortex

Ans. B

Solu. Pain in the phantom limb is caused by a complicated system involving multiple neurological components. Though it is part of the explanation, the process you mentioned—projection of nearby fibers overlapping to the sensory cortex—is more correct when explaining the phenomenon in the context of cortical restructuring and neuromatrix theory.

Ques 32. Patient had SUN BURN now takes bath 40 degree water, and feel pain

A. Thermal receptor hyperalgesia.
B. Innocuous thermal receptor allodynia
C. Thermal receptor allodynia.
D. Innocuous thermal receptor hyperalgesia

Ans. B

Solu. It is possible that the patient with the sunburn who now experiences discomfort during a bath in 40 degree water is suffering from harmless thermal receptor allodynia. This syndrome develops when the skin's thermal receptors become overly sensitive, making ordinarily painless stimuli—like warm water—painful. Following a sunburn, the epidermal layers are damaged, making the skin more sensitive and inflammatory, and this causes the nerve endings to become more sensitive. Because of this sensitization, which lowers the threshold for pain, thermal sensors that ordinarily react to harmlessly warm temperatures suddenly cause pain. As a result, a condition known as thermal allodynia can occur when even a slight rise in temperature causes severe pain or discomfort.

Ques 33. A 50 yr old female presented with dyspnoea and chest pain. Which of the following proves that she has aortic stenosis then aortic regurgitation:

A. Increase in myocardial oxygen consumption is seen with increased pressure work than volume
B. Aortic stenosis causes reduced pressure at aortic valve
C. Workload has nothing to do with myocardial oxygen consumption
D. Increase in preload more than afterload than after load

Ans. A

Solu. In distinguishing between aortic stenosis and aortic regurgitation in a patient presenting with dyspnea and chest pain, the statement that "increase in myocardial oxygen consumption is seen with increased pressure work than volume" is indicative of aortic stenosis. In aortic stenosis, the left ventricle must generate significantly higher pressures to overcome the obstructed aortic valve, leading to increased pressure work. This increased pressure work demands greater myocardial oxygen consumption, as the heart works harder to eject blood through the narrowed valve. In contrast, aortic regurgitation is characterized by volume overload rather than pressure overload; while there is increased diastolic filling and volume work, the myocardial oxygen consumption is typically less influenced by pressure work. Thus, the elevated oxygen consumption associated with increased pressure work supports the diagnosis of aortic stenosis over aortic regurgitation.

Ques 34. Taste absent in which tastebud?

A. Filliform
B. Foliate
C. Fungiform Papilla Tash
D. Circumvallate

Ans. A

Solu. The tongue's filiform papillae are the kind of taste buds that lack taste perception. Across the dorsal surface of the tongue, these tiny, conical structures are largely in charge of the tactile experience of food as opposed to taste. Filiform papillae are completely devoid of taste buds, in contrast to fungiform, foliate, and circumvallate papillae, which have taste buds and are involved in flavor perception. Their main function is to offer a rough surface that facilitates food manipulation and movement within the mouth. As such, filiform papillae do not affect taste perception, even if they aid in the mechanical processing of food.

Ques 35. Which receptor helps in improvement of insulin resistance in DM2 with regular exercise and physical activity?

A. GLUT1
B. GLUT4
C. GLUT2
D. GLUT 3

Ans. B

Solu. GLUT4 (glucose transporter type 4) is the receptor that is critical in enhancing insulin resistance in type 2 diabetes mellitus (DM2) through consistent exercise and physical activity. The insulin-responsive glucose transporter GLUT4 is mostly present in adipose and muscle tissue. Exercise causes GLUT4 to translocate to the cell membrane, where it increases glucose absorption by the cells without the help of insulin. This process enhances insulin sensitivity and lowers blood glucose levels. Frequent exercise improves GLUT4 expression and translocation, which greatly lowers insulin resistance and helps people with type 2 diabetes efficiently control blood glucose levels.

Ques 36. A men having difficulty in sleep during night. He has habit of drinking coffee before bed time what is the role of caffeine in wakefulness:

A. Blocks adenosine action and cause wakefulness
B. Activates locus coeruleus and cause wakefulness
C. No role in maintaining wakefulness if taken 1hr before sleep
D. Activates histamine release and prevents sleep

Ans. A

Solu. Through its ability to inhibit the action of the neurotransmitter adenosine, which causes sleepiness, caffeine significantly contributes to the promotion of wakefulness. Over the course of the day, adenosine builds up in the brain naturally, encouraging relaxation and getting the body ready for sleep. Caffeine lessens the sleepy effects of adenosine by opposing adenosine receptors and preventing adenosine from attaching to them. Increased neural activity and the release of neurotransmitters like dopamine and norepinephrine are the outcomes of this blockage, which help to promote alertness and lessen sensations of exhaustion. Consequently, having coffee or other caffeinated drinks right before bed might make it harder to get to sleep and stay asleep during the night, which can make it difficult to get a full night's sleep.

Ques 37. RMP predominantly affected by which ion?

A. K+
B. Ca
C. Na
D. Cl

Ans. A

Solu. Potassium ions (K^+) have a major effect on a cell's resting membrane potential (RMP). The differential distribution of ions across the cell

membrane and the membrane's selective permeability to these ions are the primary factors influencing the RMP. Because potassium ions are far more permeable to the cell membrane than other ions like sodium (Na^+) or chloride (Cl^-) at rest, potassium ions are important.
A negative charge is created inside the cell in relation to the outside due to the high intracellular concentration of K^+ and the lower extracellular concentration, which causes potassium ions to flow out of the cell through potassium channels. The outflow of K+ from the cell creates and preserves the negative resting membrane potential, which is normally approximately -70 mV in many cells. The RMP is thus primarily a reflection of the K^+ equilibrium potential, with other ions contributing to a lesser extent.

Ques 38. Alcoholic gait, nystagmus after RTA, which lobe of cerebellum is affected?

A. Flocculonodular
B. Dentate
C. Anterior lobe
D. Vermis

Ans. A

Solu. The cerebellum's flocculonodular lobe is most likely involved in a patient who presents with a alcoholic gait and nystagmus after an RTA. The archicerebellum, sometimes referred to as the flocculonodular lobe, is essential for synchronizing balance and eye movements. An alcoholic gait is a wobbly, unstable walk that is frequently caused by damage or malfunction in this area, which can cause problems with balance and gait. Furthermore, nystagmus, a condition marked by rapid, uncontrollable eye movements, can result from impairments in the flocculonodular lobe, which is important in controlling eye movements. As a result, the symptoms mentioned point to a malfunction in the cerebellum's flocculonodular lobe.

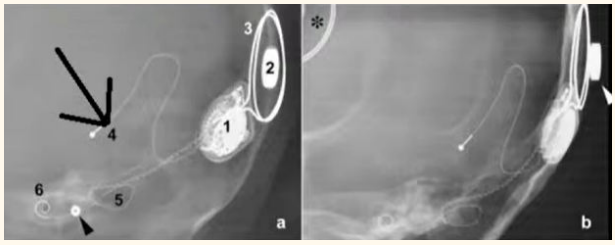
Ques 39. A 14yr old boy presented with nasal mass and recurrent Estd. 1996 episodes of bleeding from the mass. Investigation of choice.

A. Plain CT
B. CT with contrast
C. X Ray Caldwell view
D. X Ray with Pierre view

Ans. B

Solu. The preferred examination for a 14-year-old kid who presents with a nasal mass and recurrent episodes of bleeding from the mass is a CT scan with contrast. When assessing masses in the paranasal sinuses and nose, this imaging modality is quite useful.
The magnitude of the mass, its relationship to surrounding tissues, and any involvement of the sinuses or other structures can all be determined with the use of comprehensive pictures of the nasal cavity and surrounding structures provided by CT with contrast. Additionally, it helps evaluate the mass's vascularity, which is helpful for organizing other diagnostic or therapeutic procedures.

Ques 40. Cochlear implant given below identify the marked structure:

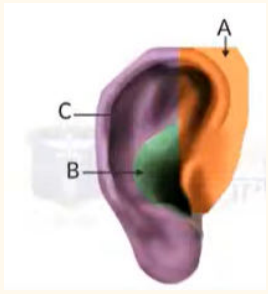


A. Internal magnet
B. Electrode
C. Receiver
D. Antenna

Ans. B

Solu. The indicated structure of a cochlear implant is called the electrode. An essential part of the cochlear implant system is the electrode array, which is meant to be surgically implanted into the inner ear's cochlea. It directly stimulates the cochlea's auditory nerve fibers, causing electrical impulses that the brain interprets as sound. For those with severe to profound sensorineural hearing loss, the electrode array's many electrodes positioned along its length enable for the stimulation of distinct cochlear regions, providing a range of sound frequencies and enhancing hearing capacity.

Ques 41. Which nerve supplies the external ear?



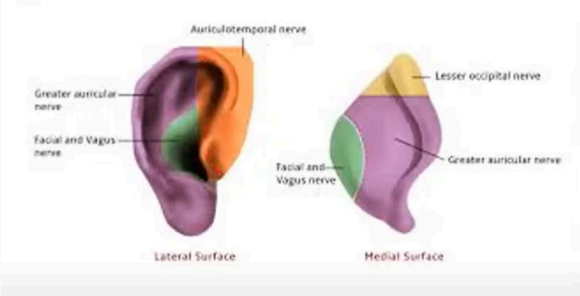
A. ATN, greater auricular, 7 and 10
B. Greater auricular, 7 and 10, ATN
C. 7 and 10, ATN, greater auricular nerve

D. ATN, 7 and 10, GAN

Ans. D

Solu. The mandibular nerve (V3) of the trigeminal nerve (CN V) branches out to become the auriculotemporal nerve (ATN), which supplies the external ear predominantly. In addition, the facial nerve (CN VII) and the auricular branch of the vagus nerve (CN X) innervate the external ear, especially the pinna and ear canal. Parts of the external ear, in particular the external ear canal and the lower portion of the auricle, are sensory innervated by the greater auricular nerve (GAN), a branch of the cervical plexus.

Ques 42. In head impulse test following finding seen in right vestibular neuritis:



A. On rotating head to right, left saccade
B. On rotating head to left, right saccade
C. On rotating head toward right, right saccade
D. On rotating to the left, left saccade

Ans. A

Solu. When the head is rotated to the right in the head impulse test, you should notice a corrective saccade, or swift eye movement, to the left if vestibular neuritis affects the right vestibular nerve. This is due to a

disparity between the perceived and actual head movements caused by the compromised right vestibular system's inability to accurately deliver information regarding head movement.
In order to make up for the perceived lack of head movement information from the right side, the head rotation causes the left vestibular system, which is in normal functioning, to detect the movement and signal the need for a corrective saccade to the left. A compensating strategy to refocus the eyes is this left saccade central position.

Ques 43. Which of the following instrument insertion will be difficult:

A. Nasogastric Tube
B. LMA
C. Tracheostomy
D. Indirect Laryngoscopy

Ans. C

Solu.

The tracheostomy tube's insertion can be particularly difficult in some tracheostomy-related circumstances. For example, it could be challenging to implant the tracheostomy tube if there is a lot of edema in the neck, if there are anatomical anomalies, or if the trachea is twisted or dislocated as a result of illness or trauma. These ailments may make it difficult to see anatomical landmarks and may prevent the tube from being positioned correctly. Additionally, scar tissue may make insertion more difficult in

cases of prior neck surgery or radiation therapy. To overcome these obstacles and guarantee a successful tracheostomy installation, appropriate preoperative evaluation and surgical technique are essential.

Ques 44. A singer presents with problem in high pitch. On examination bowing of one side vocal cord. Which of the following muscle is affected?

A. Posterior cricoarytenoid
B. Lateral cricoarytenoid
C. Cricothyroid
D. Thyroarytenoid

Ans. C

Solu. In a singer presenting with difficulty in hitting high pitches and showing bowing of one side of the vocal cord on examination, the affected muscle is likely the cricothyroid muscle. The cricothyroid muscle is crucial for adjusting the tension of the vocal cords, particularly for producing high-pitched sounds. Bowing of the vocal cords suggests that this muscle is not functioning properly on one side, leading to a reduced ability to achieve the required tension and thus affecting the singer's capability to reach higher notes.

Ques 45. A 45-year-old male presents with breathlessness and undergoes a CT scan of the paranasal sinuses (PNS). Which sinus is obstructed ?

A. Maxillary
B. Frontal

C. Sphenoid
D. Ethmoid

Ans. A

Solu. In a 45-year-old male presenting with breathlessness and undergoing a CT scan of the paranasal sinuses (PNS), if the scan reveals obstruction, it is likely in the maxillary sinus. The maxillary sinuses are commonly affected by conditions such as chronic sinusitis or nasal polyps, which can lead to obstruction and associated symptoms. This obstruction can contribute to difficulties with breathing, particularly if it results in significant sinus infection or inflammation.

Ques 46. Intraoperatively which stain is used to view following lesion:

A. AgNo3
B. Toluidine Blue
C. Congo red
D. Methylene blue

Ans. B

Solu. Toluidine Blue stain is used intraoperatively to visualize lesions, especially when finding and demarcating areas of aberrant tissue, as those found in laryngeal and oral malignancies. During surgical procedures, this dye helps surgeons distinguish between normal and sick tissues by highlighting dysplastic or cancerous cells with a stronger stain.

Ques 47. Gag reflex will be absent in which nerve injury?

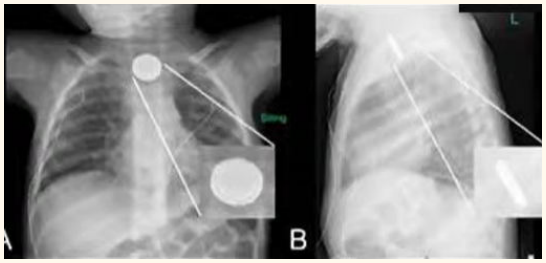
A. 5 and 10
B. 9 and 10
C. 10 and 12
D. 7 and 9

Ans. B

Solu.

If the vagus nerve (CN X) or the glossopharyngeal nerve (CN IX) are injured, the gag reflex will not occur. The sensory and motor aspects of the gag reflex are mediated by these two neurons. The vagus nerve controls the motor response, which includes the contraction of the pharyngeal muscles, whereas the glossopharyngeal nerve receives sensory information from the tonsils and back of the throat. The gag reflex may be compromised or eliminated if damage is done to one or both of these nerves.

Ques 48. In given x-ray which of the following sign is seen:



1.Double ring sign
2.String sign
3.Steeple sign
4.Thumb sign

Ans. 1

Solu. When it comes to cranial injuries in particular, the "double ring sign" on an X-ray is a distinctive finding that can suggest the existence of a certain kind of fracture or injury. This symptom is frequently connected to a basal skull fracture, which is a fracture of the skull base that causes two concentric rings to show around the base of the skull on X-ray imaging. The symbol denotes the existence of disruption or fracture lines on the skull's inner and outer tables.

Ques 49. Taste absent in which taste bud?

A. Filliform
B. Foliate
C. Papilla
D. Circumvallate

Ans. A

Solu. The taste sensation is absent in the filiform papillae. Unlike other types of taste buds, such as the fungiform, foliate, and circumvallate papillae, which contain taste receptor cells and contribute to the perception of taste, filiform papillae are primarily involved in the tactile function of the tongue. They are responsible for providing a rough texture that helps in manipulating food but do not contain taste buds or contribute to the sense of taste.

Ques 50. Which of the following may be true in this patient

A. Oesophagus is the correct site
B. Most commonly in adult
C. Mostly above cricoid
D. Mediastinal infection not present

Ans. A

Solu.

The pharynx, or throat, and the stomach are connected by the esophagus, a muscular tube. It is essential for the peristaltic movements that carry food and drinks from the mouth to the stomach. The esophagus is located between the upper portion of the stomach and the lower portion of the pharynx, namely at the gastroesophageal junction and the level of the cricoid cartilage.

Ques 51. A patient presented with c/o hearing loss and the otoscopy finding shown. What will be the Rinne test finding?

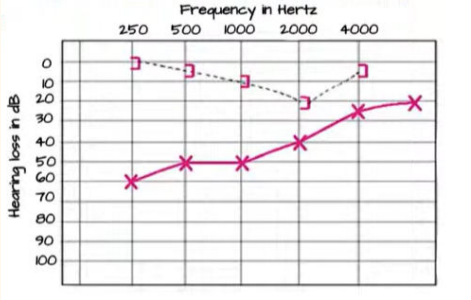
A. True positive
B. True negative
C. False positive
D. False negative

Ans. B

Solu.

In a patient presenting with hearing loss, if the otoscopy reveals findings consistent with a conductive hearing loss (such as impacted cerumen, middle ear effusion, or otosclerosis), the Rinne test would typically yield a "true negative" result. In this context, a true negative result means that the bone conduction (BC) is better heard than the air conduction (AC) in the affected ear. This is indicative of conductive hearing loss, where sound is not efficiently transmitted through the outer or middle ear, but the inner ear (cochlea) remains functional, allowing bone conduction to be perceived as louder.

Ques 52. A Female with mild CHL and tinnitus. The PTA is shown. What is the interpretation.



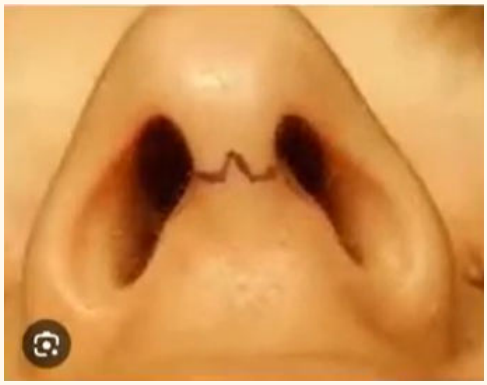
A. Otosclerosis
B. Meniere's disease
C.NIHL
D. None

Ans. A

Solu. In a female patient presenting with mild conductive hearing loss (CHL) and tinnitus, the likely interpretation is **otosclerosis**. Otosclerosis is a condition characterized by abnormal bone remodeling in the middle ear, particularly affecting the stapes bone, which can lead to its fixation.

This results in conductive hearing loss as sound waves are not efficiently transmitted from the eardrum to the inner ear. Tinnitus, or ringing in the ears, is also a common symptom associated with otosclerosis. The condition is more prevalent in females and often presents in early to middle adulthood.

Ques 53. A nasal surgery was done in this patient anda the incision mark is shown. Which of these is probably done?



A. Septoplasty
B. Rhinoplasty
C. FESS
D. Young's surgery

Ans. B

Solu. If a nasal surgery was performed and the incision marks are visible, the procedure likely done is **rhinoplasty**. Rhinoplasty, commonly referred to as a "nose job," is a surgical procedure to alter the shape or function of the nose. The incisions in rhinoplasty can be made either inside the nostrils (closed rhinoplasty) or across the columella (the tissue between the nostrils) in an open rhinoplasty. The visible incision mark is typically associated with the open approach, which allows for better visualization and more precise modifications of the nasal structure.

Ques 54. A man meet to RTA come to emergency department with complaint of back pain. No Neurological deficit. X ray spine done what will be the diagnosis ?

A. Fracture of spinous process
B. Compressed fracture
C. Fracture of base of vertebrae
D. Chance fracture

Ans. D

Solu. In the case of a man who was involved in a road traffic accident (RTA) and presents to the emergency department with back pain but no neurological deficits, an X-ray of the spine might reveal a **Chance fracture**. A Chance fracture is a type of flexion-distraction injury typically seen in the thoracolumbar region of the spine. It often occurs due to a sudden forward flexion of the spine, such as in a high-impact accident where the person is restrained by a seatbelt.
This fracture usually involves the vertebral body, posterior elements, and sometimes the intervertebral discs. Although the patient might not initially show neurological deficits, a Chance fracture is considered unstable and requires careful evaluation and management to prevent potential complications.

Ques 55. What is the type of classification used for this fracture and its type?

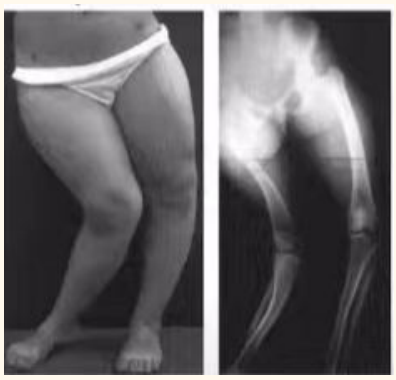
A. Gartland type 3
B. Salter Harris type 3
C. Gartland type 4
D. Salter Harris type 4

Ans. A

Solu.

Children's supracondylar humerus fractures, especially those that happen in the distal humerus, directly above the elbow, are categorized using the Gartland classification. The stability and degree of displacement of the fracture serve as the basis for this classification scheme.
Type I: The fracture is non-displaced or minimally displaced, with the bone alignment still intact.
Type II: The posterior cortex is unharmed despite the displacement of the fracture. The bone may be somewhat angulated, but it is not entirely disrupted.
Type III: There is no cortical contact between the fragments and the fracture is fully displaced. Because of the considerable separation of the bone pieces, realigning and stabilizing the fracture frequently requires surgical intervention.

Ques 56. A Child with this deformity. He has recurrent tooth abscesses. Calcium normal, Phosphorus low, PTH normal, ALP high. Diagnosis is?



A. Nutritional rickets
B. VDDR1
C. VDDR2
D. Hypophosphatemic rickets

Ans. A

Solu.

The child exhibits abnormal laboratory findings, low phosphorus, normal parathyroid hormone (PTH), elevated alkaline phosphatase (ALP), and a bone deformity. These findings, along with normal calcium and PTH levels, suggest a compensatory mechanism in which the body attempts to maintain calcium homeostasis despite the underlying deficiency. Nutritional rickets is a condition that results from a deficiency of vitamin D, calcium, or phosphate, leading to impaired mineralization of the growing bones. The recurrent tooth abscesses are also consistent with nutritional rickets, as the condition affects the teeth and the dental structure to enamel hypoplasia and increased susceptibility to dental infections.

Ques 57. A 16 yr old boy claiming as 18 yr old. Which 2 joints should be checked age estimation:

A. Wrist and knee
B. Hip and elbow
C. Hip and knee
D. Head and shoulder

Ans. A

Solu.

In the scenario where a 16-year-old boy is claiming to be 18 years old, age estimation can be conducted by examining certain joints where the growth plates (epiphyses) are still active in younger individuals but are closed in adults. The wrist and knee joints are commonly used for this purpose. The wrist joint, specifically the distal radius and ulna, is assessed through X-rays to check whether the epiphyseal plates have fused, which typically occurs between 16 and 18 years of age. Similarly, the knee joint, particularly the distal femur and proximal tibia, can be examined. The closure of the growth plates in these areas is another indicator of skeletal maturity, usually completing around the same age range. Therefore, examining the wrist and knee joints is critical in determining whether the boy's skeletal age corresponds to his claimed age of 18 years.

Ques 58. What is the device/ implant shown in this following picture used for femur neck fracture?

A. Condylar plate
B. Dynamic condylar screw
C. Dynamic hip screw
D. Locking plate

Ans. C

Solu.

A Dynamic Hip Screw (DHS), which is frequently used in the treatment of femoral neck fractures, is most likely the device or implant depicted in the photo. The purpose of this surgical implant is to fix the fracture internally, giving stability and promoting healing.
The DHS is made up of a large lag screw that is placed into the neck and head of the femur and coupled to a side plate that is screwed onto the femoral shaft. By enabling regulated compression at the fracture site, this device lowers the likelihood of problems like non-union or avascular necrosis while promoting union.
All things considered, the Dynamic Hip Screw is a popular implant that is often used to stabilize femoral neck fractures, particularly in older patients who have osteoporotic bones.

Ques 59. Pain in back of leg and thigh after lifting heavy weight. Which segment involved?

A. L4
B. L5
C. L3
D. S1

Ans. B

Solu.

Pain in the back of the leg and thigh after lifting a heavy weight suggests possible involvement of the L5 nerve root. This type of pain is often associated with a herniated disc or lumbar spine issue that affects the L5 nerve root.
The L5 nerve root typically supplies sensation and motor function to the posterior and lateral aspects of the thigh, the lateral aspect of the leg, and the dorsum of the foot. Pain radiating down the back of the leg and thigh could indicate irritation or compression of the L5 nerve root, which can occur due to disc herniation or other spinal conditions affecting the lumbar region.
In such circumstances, it is vital to do a complete clinical evaluation and maybe imaging investigations to confirm the diagnosis and determine appropriate treatment.

Ques 60. Fracture base of 5th metatarsal, below knee cast should be worn for

A. 6-8 weeks
B. 2-3 weeks
C. 16-20 weeks
D. 3-5 weeks

Ans. A

Solu.

For a fracture at the base of the 5th metatarsal, a below-knee cast should normally be worn for 6-8 weeks. This timeframe permits appropriate healing and stabilization of the fracture, particularly in the event of a Jones fracture or an avulsion fracture, which are common at this site.
Since the base of the fifth metatarsal is a crucial location for weight bearing and mobility, it is imperative to use a cast to provide the correct immobilization and support during the healing process in order to avoid

issues like non-union or delayed union. Follow-up exams could be required during this time to track the healing progress and make any necessary therapy adjustments.

Ques 61. A football player had twist of the knee and ankle, clinically no bony injury was appreciated. Examiner is doing the test as shown her. Which test is this

A. Ant drawer for acl
B. Post drawer pcl
C. Mc murray
D. Lachman

Ans. D

Solu.

The tester may do the Lachman test if a football player has twisted their knee and ankle but there are no evident bony injuries. This test evaluates the anterior cruciate ligament's (ACL) structural integrity in the knee.
In the Lachman test, the examiner uses one hand to stabilize the femur and the other to draw the tibia forward. If the tibia exhibits significant anterior translation in relation to the femur, suggesting a possible ACL injury, the test is deemed positive. It is an essential clinical test for determining knee stability and identifying ACL injuries.

Ques 62. Fracture at which site will affect the longitudional growth of the bone

A. Epiphyseal plate
B. Epiphysis
C. Metaphysis
D. Diaphysis

Ans. A

Solu. A fracture at the **epiphyseal plate** (also known as the growth plate) will affect the longitudinal growth of the bone. The epiphyseal plate is responsible for the lengthening of bones during growth in children and adolescents.
Damage to this area can disrupt normal growth and lead to potential deformities or growth discrepancies. Fractures involving the growth plate may require careful management to ensure proper healing and minimize long-term impacts on bone development.

Ques 63. Patient not unable to make "OK" Sign. Which muscle is involved?

a. FDS
b. FDP
c. FIC

Ans. b

Solu. When a patient cannot form the "OK" sign, there is usually a problem with the FDP (flexor digitorum profundus) muscle.
The distal interphalangeal joints (DIP) of the fingers are flexed by the FDP muscle. The FDP is essential for flexing the thumb and index finger's distal phalanges to form a circle in the "OK" sign. A problem with the FDP

muscle or its related tendon, possibly brought on by an injury, nerve damage, or other problems impairing hand function, may be indicated by difficulty producing this sign.

Ques 64. Which area is fracture in the given xray?

a. Tibial tuberosity
b. Medial epicondyle of tibia
c. Gerdy tubercle

Ans. a

Solu. Situated immediately below the knee joint on the anterior part of the tibia, the tibial tuberosity is a noticeable bony feature. It acts as the point of attachment for the patellar ligament, which joins the tibia and patella (kneecap). This structure is essential to knee biomechanics, especially when it comes to leg extension at the knee joint. The palpable tibial tuberosity is frequently the location of damage, as in the case of Osgood-Schlatter disease, which is caused by repeated stress or tension on the growing bone during adolescent growth spurts, resulting in inflammation.

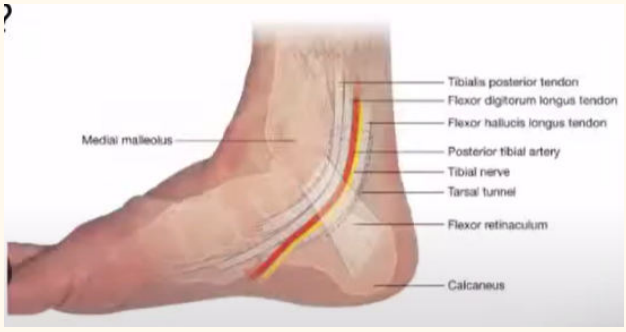
Ques 65. Which nerve will be commonly involved If the injury occurs at the marked levels?

a. L4
b. L5
c. L2
d. L3

Ans.

Solu.

Ques 66. Artery passing between medial malleolus and the Achilles tendon?



Ans. Posterior tibial artery

Solu. The main artery that runs between the Achilles tendon and the medial malleolus is called the posterior tibial artery. This artery, a branch of

the popliteal artery, feeds blood to the muscles in the posterior leg and the plantar surface of the foot as it passes through the leg's posterior compartment. It is usually perceptible as it passes behind the medial malleolus, which makes it a crucial location to evaluate the peripheral circulation in the lower limb. The posterior tibial pulse, which can reveal important details about the arterial blood flow to the foot, is frequently felt in this region.

Ques 67. A child, left femur shaft fracture, managed by plating. Wi

a. Creeping substitution
b. Primary callus
c. Secondary callus

Ans. b

Solu. The development of a main callus is an important stage in the healing process of bone in a child treated with plating for a left femur shaft fracture. The body starts repairing itself after a fracture, and one of the first indications that the bone is healing is the development of a callus.
The first piece of new bone tissue to grow between the femur's broken ends is the main callus. Osteogenic cells proliferate and create woven bone, a less organized and mechanically weaker type of bone, which is usually the first step in this process. The structural integrity of the bone is regained as the woven bone, or primary callus, progressively grows and remodels into stronger, more ordered lamellar bone.
Because of their high rate of bone turnover and capacity for growth, young patients typically experience bone repair more quickly than adult patients. During this crucial time, the plating utilized to anchor the femur aids in maintaining alignment and stability, enabling the major callus to properly form around the fracture site. This callus will eventually solidify more fully, returning the bone to its typical strength and functionality.

Ques 68. What is the most likely diagnosis for the lesion shown here?

Ans. Sunburst

Solu. A kind of cancerous bone tumor called osteosarcoma is most common in children and teenagers and usually affects the long bones, including the femur. The radiographic appearance of spiculated periosteal response, in which the bone spicules shoot forth from the tumor like sunrays, is referred to as the "sunburst" pattern. The aggressive nature of the tumor as it pushes through the periosteum and the development of new bone along the tumor margins are the causes of this pattern.

Ques 69. A diaphyseal tumor, probably small round blue cells. Which test/translocation is useful for diagnosis?

a. T11,22
b. T15,17

Ans. a

Solu. A malignant bone tumor called Ewing sarcoma is frequently discovered in the diaphysis, or shaft, of long bones, especially in young patients. Small, spherical, blue cells are the distinguishing feature of Ewing sarcoma on histology. The EWS-FLI1 fusion protein is produced when the FLI1 gene on chromosome 11 and the EWSR1 gene on chromosome 22 fuse together as a result of the particular translocation

t(11;22). Reversible transcription-polymerase chain reaction (RT-PCR) and fluorescence in situ hybridization (FISH) methods can identify this aberrant fusion protein, which plays a crucial role in the tumor's biology and aids in the diagnosis of Ewing sarcoma.

Ques 70. What is the level of amputation shown here?

Ans. Below Knee Amputation

Solu. A below-the-knee amputation (BKA) is a surgical procedure in which the lower leg is removed below the knee joint while leaving the knee intact. The tibia and fibula are usually transected in a BKA, and the residual stump is molded and wrapped in skin and soft tissue to make using a prosthesis easier.
Because the knee joint is preserved, this kind of amputation is frequently chosen over more severe ones, like an above-knee amputation, because it results in better functional outcomes, such as simpler prosthetic use and more effective walking.

Ques 71. A 40-year-old RTA case is brought to casualty & declared brought dead by Dr. the Dr informs police official & sends body to mortuary. Autopsy in this case will be conducted on request of

A. PP
B. Defence lawyer
C. Dr
D. Investigating officer

Ans. D

Solu. When a 40-year-old is taken to the hospital after being involved in a road traffic accident (RTA) and pronounced deceased, the investigating officer usually requests that an autopsy, often referred to as a post-mortem examination, be performed.
A death becomes a medico-legal case when it happens in suspicious or unusual circumstances, like in an RTA. The person in charge of the incident's investigation, the investigating officer, will ask for an autopsy to ascertain the precise cause of death, collect proof for future court cases, and rule out any foul play. The results of the autopsy will be essential to the formal inquiry and any ensuing legal proceedings.

Ques 72. A 30-year-old male dead body was brought for autopsy. The Dr notices greyish white waxy material with preserved facial features. Which is true of following change

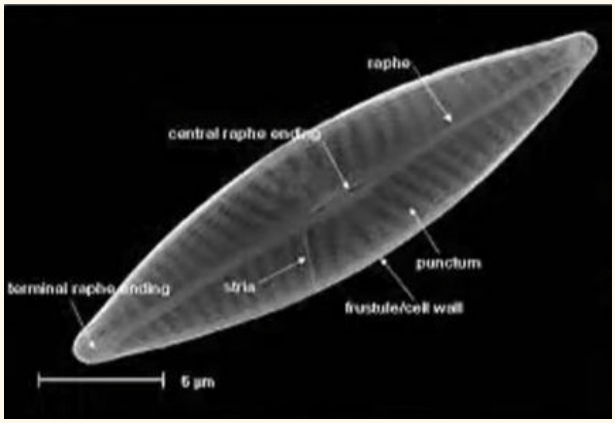
A. High temperature needed
B. Hot & dry environment needed
C. Starts very early after death
D. It is a form of body preservation by saponification of fats

Ans. D

Solu. The description of a waxy, greyish-white substance on a dead person that had facial characteristics intact is typical of adipocere development, sometimes referred to as saponification.
Adipocere is a method of body preservation in which body fats are hydrolyzed and hydrogenated to produce a soapy, waxy material. Usually, this process occurs in bodies buried in anaerobic, damp settings. Adipocere formation is a noteworthy discovery during autopsies, especially when the body has been in a moist or damp environment for a lengthy

period of time, as it can maintain body features and postpone decomposition.
Thus, it is accurate to state that adipocere is a method of fat saponification used to preserve the body.

Ques 73. The microscopic image of organism was analyzed in a drowning case. Which is correct about them



A. Contains silica & chlorophyll point
B. Are microscopic unicellular bacteria
C. Present only in bone marrow
D. Are not resistant to acids & heat

Ans. A

Solu. When investigating a possible implicated organism under the microscope in a drowning case, the search for diatoms is frequently the main goal. Diatoms are a kind of microscopic algae that can be found in a variety of aquatic settings.
Silica Content: Diatoms can be distinguished by their silica-based cell wall. Even after the body has been removed from the water, the silica walls are still detectable in the tissues because of their excellent preservation.

Chlorophyll: Diatoms do contain chlorophyll, but their silica content makes this less significant for forensic purposes. In the context of drowning, diatoms are most frequently identified by their silica content.
The identification of drowning as the cause of death in forensic situations can be reinforced by the finding of diatoms in the victim's organs, as these organisms are typically found in water.

Ques 74. The range of fire by a rifled firearm per the image

A. Contact
B. Close
C. Distant
D. Cannot be opined

Ans. B

Solu. When a rifled firearm's range of fire is referred to as "close" in forensic parlance, it usually means that the bullet's trajectory hasn't been considerably impacted by outside factors like air resistance or distance. The close range for rifled weapons is typically characterized as being between a few feet and several yards (typically up to around 3-5 feet or 1 meter). Within this range, you might see traits like:
No discernible dispersion or spread of the bullet's trajectory.
gunshot residue (GSR) or powder burns (stippling) in a recognizable pattern on the skin surrounding the wound.
The lack of soot, or its sparseness, surrounding the wound suggests that the shot was fired relatively near. This close-range classification helps

forensic experts determine the firing distance, which can be crucial in criminal investigations to reconstruct the events of the shooting.

Ques 75. A pregnant female comes to a gynecologist who sends her for USG. On USG twin pregnancy noted with about one month difference in age of fetuses. Which is true of following

A. Superfetation
B. Superfecundation
C. Suppositious child
D. Posthumous child

Ans. A

Solu. Superfetation is a rare condition in which a woman conceives her second child after her first has already begun to grow. This may lead to the simultaneous presence of fetuses in the uterus at various gestational ages.
Fertilization of a second egg occurs during superfetation, which occurs after the first embryo has implanted in the uterus.
It is different from twin pregnancies that arise from the fertilization of two independent eggs within the same cycle (dizygotic twins), where the fetuses are usually of the same gestational age, or from the splitting of a single fertilized egg (monozygotic twins).
Superfetation is characterized by a marked age difference between the fetuses, while in normal twin pregnancies, the fetuses are roughly the same age.

Ques 76. The findings in image is suggestive of which poisoning

A. OPC
B. Arsenic
C. Lead
D. Mercury

Ans. B

Solu. Acute problems: Gastrointestinal distress (vomiting, diarrhea), abdominal pain, and even neurological problems are common acute symptoms of arsenic poisoning.
Chronic Exposure Indicators: Hyperpigmentation, keratosis, and peripheral neuropathy are a few of the skin abnormalities that can result from prolonged arsenic exposure.
Histological Findings: When examined under a microscope, arsenic poisoning is linked to distinct cellular alterations and harm to several organs, such as the skin, kidneys, and liver.
Hair and Nails: Because arsenic tends to collect in these tissues, it can also be found in hair and nails.

Ques 77. Many people have consumed contaminated alcohol and present with abdominal pain, confusion, decreased vision. Methyl alcohol conc detected as 20 mg %. On assessment which metabolites will be found

A. Formic acid & lactic acid
B. Glycolic acid & oxalic acid
C. Oxalic acid & formic acid
D. Glyoxylic acid & formic acid

Ans. B

Solu. When someone has consumed tainted alcohol and exhibits symptoms of methanol poisoning, such as impaired eyesight, confusion, and abdominal discomfort, the presence of certain metabolites is essential for diagnosis and treatment. Methanol undergoes enzymatic conversion during bodily metabolism, resulting in the production of harmful compounds.
Alcohol dehydrogenase in the liver predominantly breaks down methanol into formaldehyde, which is subsequently broken down into formic acid. Nevertheless, the buildup of metabolites called glycolic acid and oxalic acid, which are produced when methanol is consumed in excessive amounts, is also linked to methanol poisoning.
Glycolic acid is a metabolite of ethylene glycol, another hazardous alcohol, but in severe situations, complicated interactions or overlaps in metabolic pathways can also result in its presence in the context of methanol poisoning.
Oxalic Acid: Oxalic acid is likewise an ethylene glycol metabolite. Although methanol poisoning is not directly caused by metabolites of methanol, it can sometimes be identified through complicated metabolic processes or differential diagnosis.
The main toxic metabolite linked to methanol overdose is formic acid, which causes metabolic acidosis and visual nerve damage, among other serious symptoms.

In conclusion, glycolic and oxalic acids can be found in the setting of methanol poisoning, but formic acid is the most common.

Ques 78. A person comes to emergency after consumption of substance, the form & dose of which is not known to relatives. The patient shows tachypnea, hypotension. On metabolic assessment high anion gap acidosis is noted with hypocalcemia. Diagnosis

A. Methyl alcohol
B. Ethylene glycol
C. Dhatura
D. Ethyl alcohol

Ans. B

Solu. Ethylene glycol poisoning is a possible diagnosis in a case when a patient arrives at the emergency room after ingesting an unknown chemical and has tachypnea, hypotension, and high anion gap acidosis with hypocalcemia on metabolic testing.
A hazardous alcohol that is frequently present in industrial goods and antifreeze is ethylene glycol. Its poisonous metabolites cause serious metabolic disruptions when consumed:
High Anion Gap Metabolic Acidosis: Glycolic acid and oxalic acid, which are produced during the metabolism of ethylene glycol, are two of the compounds that cause this metabolic acidosis. Unmeasured anions are present in the blood, as shown by the high anion gap.
Hypocalcemia: Oxalic acid, which is produced by the metabolism of ethylene glycol, binds calcium to create calcium oxalate crystals. This may cause a notable decrease in serum calcium levels, which would exacerbate hypocalcemia.
Hypotension and tachypnea: The metabolic acidosis and potential systemic effects of the poisoning are responsible for these symptoms.
In cases of ethylene glycol poisoning, prompt identification and treatment are essential. In addition to supportive measures like intravenous fluids and the correction of metabolic imbalances, treatment sometimes entails the injection of antidotes like fomepizole or ethanol, which inhibit the enzyme alcohol dehydrogenase and prevent the creation of harmful metabolites.

Ques 79. 36 yr - G4L3P3- FULL TERM PREG Labor arrested at 8cm cervical dilation. EM CS done after counselling patient. Baby alive but intractable PPH. EM HYSTERECTOMY done to save life of mother

A. C
B. P
C. T
D. T

Ans. A

Solu. 36 years old, Gravida 4, Para 3 (G4P3): This suggests that the woman has given birth three times and been pregnant four times.
Labor stopped at 8 cm cervical dilation in a full-term pregnancy: This indicates that labor was moving forward but stopped at that point.
After counseling, an emergency cesarean section (C-section) is performed: Because of the labor arrest, a cesarean section was done, and the baby was born alive.
Severe and uncontrollably bleeding after birth is known as intractable postpartum hemorrhage (PPH).
In an emergency The mother's life was saved by a hysterectomy, which was required to stop the bleeding and safeguard her health.
Uterine atony, retained placenta, and lacerations are a few of the significant complications that can lead to intractable PPH. In situations where conservative methods to reduce bleeding prove ineffective and the hemorrhage is clearly life-threatening, the mother may need an emergency hysterectomy to preserve her life.
In light of the circumstances, the case is best classified as a severe postpartum hemorrhage requiring an emergency hysterectomy. The important thing to note in this case is how quickly the attempted birth management was followed by surgical intervention to control the potentially fatal hemorrhage.

Ques 80. A 30-year-old female abuser with suicidal tendency brought to hospital. Mydriasis, tachypnea, tachycardia +. Diagnosis

A. Cocaine
B. Morphine
C. Heroin
D. Chlorpheniramine

Ans. A

Solu. Tachypnea (rapid breathing), tachycardia (fast heart rate), and mydriasis (dilated pupils) are symptoms that are commonly associated with cocaine consumption.
Strong stimulants like cocaine can have a variety of impacts on the sympathetic nervous system. These are the symptoms that correspond with cocaine use:
Mydriasis: Because cocaine stimulates the sympathetic nervous system, it frequently causes dilated pupils.
Tachypnea and Tachycardia: As part of its stimulant impact, cocaine raises heart rate and breathing rate, which frequently results in elevated blood pressure and heart rate.
In addition to other systemic consequences, cocaine usage can cause agitation, paranoia, hallucinations, and suicidal thoughts. It's critical to treat underlying risk factors, such as possible substance misuse difficulties, in addition to the current symptoms in a professional context.

Ques 81. MTP in 21-year-old, 10-week pregnancy is to be done by medical methods by using

A Intra uterine hyperosmotics
B Dinoprostone
C. Oxytocin infusion
D. M +M

Ans. D

Solu. The most typical medical procedure for a 21-year-old woman seeking a medical termination of pregnancy (MTP) at 10 weeks of pregnancy is to combine several drugs. At this gestational age, the typical protocol for a medical abortion usually consists of:
Mifepristone (M): This anti-progestin inhibits progesterone, a hormone required to keep a pregnancy going. Usually, it is given initially to terminate the pregnancy.
Misoprostol (M): This prostaglandin analog induces contractions in the uterus, which result in the expulsion of the pregnancy. It is used in conjunction with mifepristone to finish the abortion process by inducing uterine contractions.
When taken under medical supervision, this combination is usually regarded as safe and successful for pregnancies up to 10 weeks gestation.

Ques 82. A 22 weeks of gestation unmarried 14-year-old girl, who is rape victim comes at your clinic medical termination. What is true for medical abortion?

A. MTP can be done in rape victim till 24 wks.
B. Only one Doctor opinion required
C. Only done if risk of life
D. MTP can be done after permission of medical board

Ans. A

Solu. There are a number of legal and medical factors to take into account when a rape victim undergoes medical termination of pregnancy (MTP). In particular:
Gestational Age Limit: The maximum gestational age at which a medical abortion can be performed is frequently limited by a number of legal

frameworks, including those in different nations. Up to 10–12 weeks of gestation, medical abortion is permitted in many states. The limit may be increased in cases of rape or incest, but often not for longer than 24 weeks unless there are certain medical or legal reasons.
Legal and Medical Considerations: An abortion may be lawfully allowed in some situations for a 14-year-old rape victim who is 22 weeks pregnant, but there are frequently additional legal and ethical issues to take into account. This could involve judicial directives or permission from pertinent authorities to
Medical Abortion: Compared to previous stages, a medical abortion at 22 weeks of gestation typically follows a distinct strategy. A combination of drugs and potentially surgery would be needed, depending on the exact procedures and the resources that are available.
In conclusion, medical abortion is normally allowed up to a certain gestational age, however the legal framework may differ. In cases involving rape, particularly beyond the standard limitations, extra measures or permits may be required.

Ques 83. This is seen in postmortem examination of which type of asphyxia:

A. Throttling
B. Smothering
C. Hanging
D. Garrotting

Ans. B

Solu. The discovery that smothering is a form of asphyxia is usually indicated by the presence of a particular kind of physical or pathological evidence in a postmortem investigation.
Smothering is a type of asphyxia in which the airway becomes blocked, usually by anything covering the face that prevents air from entering the body. Several distinctive characteristics from the postmortem examination can be used to identify this:
Outside Proof: imprints or marks on the neck or face, especially if the cloth may have been rubbed on the skin in that area.
Internal Determinations: Due to insufficient air intake, the examination may uncover indications of airway obstruction or congestion in the lungs.
Additional Indications: Foreign objects in the mouth or airway, as well as any bruising or petechiae (small red or purple spots caused by bleeding) around the eyes or on the face.
Smothering asphyxia occurs when the victim's ability to breathe is blocked by an external source, leading to a lack of oxygen and resultant asphyxia.

Ques 84. Patient from railway station was arrested by police shows symptoms like dilated pupils, sweating, hot skin staggering gait. He suspected to have intoxication of:

A. Dhatura
B. Cocaine
C. Alcohol
D. Morphine

Ans. A

Solu. Datura intoxication may be evident in a patient exhibiting dilated pupils, perspiration, hot skin, and a staggering walk, particularly if the patient is discovered in an environment like a train station where drugs may be misused or used often.

The plant datura is well-known for its strong anticholinergic properties, which can cause a variety of symptoms, such as:
Mydriasis-related Dilated Pupils: because Datura has anticholinergic properties that prevent acetylcholine from acting.
Sweating and Hot Skin: The body's reaction to anticholinergic actions may result in these symptoms.
Staggering Gait: Walking difficulties and a staggering gait can be caused by impairments in motor control and coordination.
Tropane alkaloids, such as scopolamine and atropine, found in datura have the potential to be extremely toxic to the anticholinergic system. Impaired motor skills, delirium, confusion, and hallucinations are common clinical presentations.
Managing Datura intoxication requires prompt detection and treatment, which in extreme situations may include supportive care and the injection of antidotes such physostigmine.

Ques 85. In MTP at 28 weeks for congenital anomalies whose presence is not required:

A. Obstetrician
B. Lawyer
C. Pediatrician
D. Sonologist

Ans. B

Solu. For legal or procedural reasons, certain people may need to be present in the event of a medical termination of pregnancy (MTP) at 28 weeks due to congenital defects. However, during the actual medical or surgical operation, a lawyer is usually not needed.
Medical Team: Obstetricians, gynecologists, and other health care providers are vital to the procedure's success.
Patient: The person having the operation.
Legal Representatives: To make sure that all legal requirements are fulfilled, legal representatives or counselors may be involved in some circumstances, particularly with advanced gestational age or significant legal issues.
Social workers or counselors may be involved to help the patient along the way by offering support and direction.
Rather than being present for the entire process, a lawyer's role is typically limited to the legal issues of getting the treatment approved.Medical Team: Obstetricians, gynecologists, and other health care providers are vital to the procedure's success.
Patient: The person having the operation.
Legal Representatives: Depending on the circumstances, such as an advanced gestational age or complicated legal issues, legal representatives or counselors may be involved to ensure that all legal requirements are met.
Counselors or Social Workers: They may be involved to provide support and guidance to the patient throughout the process.
The involvement of a lawyer is generally related to the legal aspects of obtaining approval for the procedure, rather than being present during the procedure itself.

Ques 86. A G5P4 women comes for routine sonography for first time, she has early four daughters and want boy this time and ask for sex

determination, to be bide to above depicted guidelines what will you choose:

A. Will check routine ANC and sex for developmental ABN and do not revile gender to pt
B. Will check routine ANC and sex for developmental ABN and do revile gender to pt
C. Do revile gender if a girl
D. Check only routine ANC, do not check sex

Ans. A

Solu. The ethical and legal criteria around sex determination must be scrupulously followed in the event that a Gravida 5, Para 4 (G5P4) lady arrives for routine sonography and requests the fetus's sex determination because she prefers a male child.
As per contemporary medical and ethical principles, particularly in numerous jurisdictions where determining a person's sex for non-medical purposes is forbidden:
Regular ANC and Sex for Developmental Abnormalities: To evaluate the general health of the fetus and look for developmental abnormalities, do routine prenatal care (ANC) and ultrasound. This includes looking for any developmental or congenital problems that might exist.
Don't Tell the Patient the Fetus' Gender: Since it is illegal in many locations to determine a person's gender for non-medical reasons (like having a preference for a particular gender), it is best not to tell the patient the fetus' gender.
In conclusion, you should concentrate on routine ANC to evaluate the health and growth of the pregnancy while keeping the patient unaware of the sex of the fetus. This method adheres to ethical standards and legal requirements, ensuring that the focus remains on the health and well-being of both the mother and the fetus.

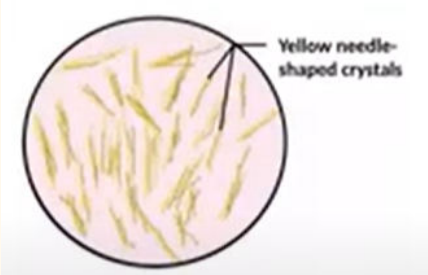
Ques 87. A child was born after the death of his father, some of them claimed that the child is not from his biological father, DNA fingerprinting was done to identify the father, and died father was found to be the biological father, this child is called as

A. Posthumous child
B. Suppositious child
C. Illegitimate child

Ans. A

Solu. In the case mentioned, a child is said to be a posthumous child if the father passed away before the child was born and DNA testing proves the deceased person is, in fact, the child's biological father.
A child born after the passing of one parent—in this example, the father—is known as a posthumous child. This kind of situation frequently occurs in inheritance and legal contexts, when establishing the biological link is essential for decisions about things like legal status and inheritance rights.
Here is a quick glossary of the terms:
A posthumous child is one who is born following the passing of a parent. In legal circumstances, this status is significant, particularly when it comes to inheritance and children's rights.
DNA fingerprinting: A technique that compares genetic material to verify biological ties, like paternity.
The child's legal and biological ties to the deceased parent are recognized when the child is identified as a posthumous child, as verified by DNA testing.

Ques 88. A child was a victim of sexual assault, test was done using perianal swab, what's the name of this test:



Yellow needle shaped crystals
A. Barberio test
B. Teichman test
C. Takayama test
D. Florence test

Ans. A

Solu. The test you are referring to is called the Barberio test, and it entails identifying yellow needle-shaped crystals in a perianal swab taken after a sexual assault.
The Barberio test is used to identify spermatozoa by looking for golden needle-shaped crystals. This test verifies the existence of seminal fluid and provides proof of sexual activity as part of the forensic examination in situations of sexual assault. These crystals' identification aids in connecting the suspect to the crime.

Ques 89. Which one is correct about sequence of rigor mortis?

A. Centre to periphery
B. Head to foot
C. Foot to head
D. Simultaneously

Ans. B

Solu. The term "rigor mortis" describes the process by which the body stiffens after death, and it usually proceeds as follows:

Head and Neck: Usually, rigor mortis starts in the facial muscles, especially in the jaw and eye regions.
Trunk: After that, the torso becomes stiff.
Limbs: Lastly, the arms and legs are included.
Thus, the proper progression of rigor mortis is typically from the head to the foot. The procedure depicts how muscle rigidity moves down the body from the head and neck.

Ques 90. A sexual assault case in court -"in camera "trail:

A. Closed court proceedings
B. Recording of proceedings
C. Open court proceedings
D. Proceeding occurring in different place.

Ans. A

Solu. A "in camera" trial is a legal phrase for closed court sessions in which the case is heard in secret, away from members of the public and media. This kind of procedure is usually utilized to preserve the privacy and dignity of all parties concerned, especially the victims, in delicate circumstances like sexual assault.

Ques 91. An 18 yr old male accused of rape claims he is 16 yr old. Which joint X-ray should be done:

A. Elbow and ankle
B. Knee and wrist
C. Shoulder and head
D. Hip & knee

Ans. B

Solu. X-rays of the knee and wrist should be taken in the instance of an 18-year-old boy who asserts that he is 16 years old in order to determine chronological age and evaluate bone maturity.
The distal radius and ulna's epiphyseal plate maturation is frequently assessed using a wrist X-ray. The distal femur and proximal tibia growth plate closure is evaluated by a knee X-ray. These assessments aid in ascertaining if the skeletal development corresponds with the stated 16-year-old age or the true 18-year-old age.

Ques 92. Sour taste is mediated by:

A. TRPV3 Channel
B. Metabolic receptors
C. Gpcr T1R1
D. Gpcr T1Ra

Ans. D

Solu. The mechanism you named is not the one that mediates the perception of sour flavor. Ion channels, not G protein-coupled receptors (GPCRs) like T1R receptors, are the main organs responsible for detecting sour taste.
The TRP (Transient Receptor Potential) channel, more especially the TRPP3 (TRP channel, polymodal 3) channel, which is sensitive to acidic substances, is the main ion channel implicated in the sensing of sour tastes.
The hydrogen ions (protons) found in acidic foods are sensed by the taste receptor cells that identify sourness. This results in modifications to intracellular ion concentrations and subsequent brain transmission.
Rather than sour taste, T1R receptors, including T1R1, T1R2, and T1R3, are involved in sweet and umami taste experiences.