NEET PG 2024 Shift-2 Question Paper with Solutions

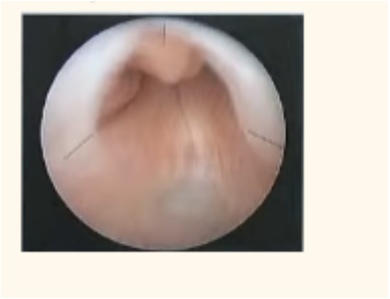
Time Allowed :3 hour 30 minutes	**Maximum Marks :**800	**Total questions :**200

General Instructions

Read the following instructions very carefully and strictly follow them:

1. The test is of 3 hours 30 minutes duration.
2. The question paper consists of 200 questions out of which 180 MCQs must be answered. The maximum marks are 800.
3. There are four parts in the question paper consisting of Biology, Physics, Chemistry and Mathematics.
4. Each subject will be divided into two sections, A and B which will have 35 and 15 questions respectively. Candidates will have to answer only 10 questions in Section B.
5. 4 marks are awarded for each correct answer and 1 mark is deducted for each wrong answer

1. What is the management of the endoscopic finding given in the image?



(A) Stenting

(B) Balloon dilatation

(C) Fulguration

(D) Internal urethrotomy

Correct Answer: (C) Fulguration

Solution: Fulguration is a process where abnormal tissue is destroyed using heat generated by an electric current. This is commonly used in cases of superficial tumors or abnormal tissue growth, as suggested by the endoscopic findings.

Quick Tip

Fulguration is a useful treatment option for superficial lesions, where heat is applied to destroy the abnormal tissue.

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2. A young patient presented with recurrent colicky abdominal pain, urine microscopy found to have crystals and RBC. What is the diagnosis?

(A) Oxalate stone

(B) PKD

(C) Cystine stones

(D) Glomerulonephritis

Correct Answer: (C) Cystine stones

Solution: Cystine stones are caused by cystinuria, a genetic disorder that leads to excessive excretion of cystine, an amino acid. These stones form in the kidneys and are associated with recurrent colicky pain, crystals in urine, and hematuria (RBCs in urine).

Quick Tip

Cystine stones are typically diagnosed in younger patients with recurrent kidney pain and characteristic crystals on urine microscopy.

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3. Identify the image given in UGIE (Upper Gastrointestinal Endoscopy):

(A) Barrett's esophagus

(B) Esophageal varices

(C) Gastric erosion

Correct Answer: (B) Esophageal varices

Solution: Esophageal varices are dilated veins in the esophagus, often due to portal hypertension, and can be visualized during UGIE. These varices are prone to bleeding, making them an important finding in patients with liver disease.

Quick Tip

Esophageal varices are a common finding in patients with liver cirrhosis and portal hypertension, and they require careful management to prevent life-threatening bleeding.

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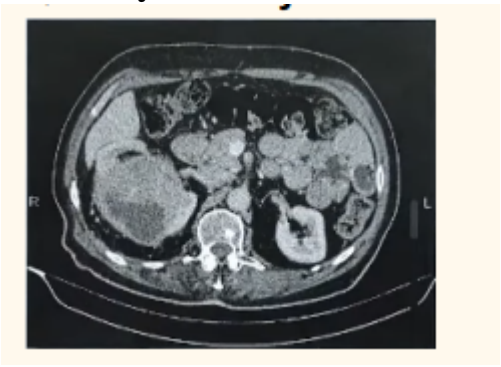
4. Identify the disease shown in the image:



(A) PKD (Polycystic Kidney Disease)

(B) Renal cyst

(C) Medullary sponge kidney

(D) PUJ obstruction (Pelvi-Ureteric Junction Obstruction)

Correct Answer: (B) Renal cyst

Solution: The image likely shows a renal cyst, which is a common finding in the kidney and can be either simple or complex. Renal cysts are typically benign, but their management depends on size, symptoms, and complications.

Quick Tip

Renal cysts are usually benign, but large or symptomatic cysts may require further evaluation or treatment, such as drainage or surgery.

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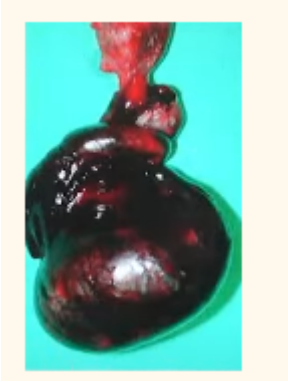
5. A 12-year-old child presented with sudden severe onset of scrotal pain after a history of trauma 6 hours before. Intraoperative image is given. What is the likely diagnosis?



(A) Torsion testis with gangrene

(B) Testicular hematoma

(C) Torsion testis

(D) Gangrene of testis

Correct Answer: (A) Torsion testis with gangrene

Solution: Testicular torsion is an emergency where the spermatic cord twists, cutting off blood supply to the testis. If left untreated, it can lead to testicular necrosis (gangrene). Intraoperative findings would typically show a dark, necrotic testis due to a lack of blood flow.

Quick Tip

Testicular torsion is a surgical emergency, and prompt intervention within 6 hours is crucial to save the testis from gangrene.

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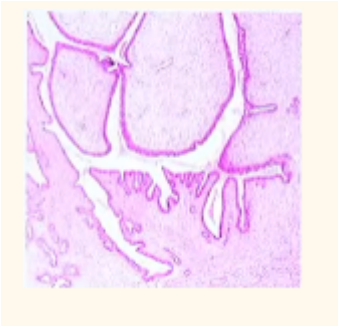
6. A 40-year-old female with a lump in the breast measuring 5 X 6 cm. The HPE (Histopathological Examination) given in the image, what is the likely diagnosis?



(A) Phyllodes tumour

(B) Fibroadenoma

(C) Breast carcinoma

Correct Answer: (A) Phyllodes tumour

Solution: Phyllodes tumor is a rare, typically benign breast tumor that can vary in size. It is characterized by its leaf-like structure on histopathological examination. Phyllodes tumors may have malignant potential, so surgical excision is often performed.

Quick Tip

Phyllodes tumors are distinctive for their leaf-like histological appearance and are treated by surgical excision. They can recur, and malignant variants require more aggressive treatment.

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7. What is the negative pressure in VAC dressing?

(A) 60-90 mmHg

(B) 90-100 mmHg

(C) 120-130 mmHg

(D) 130-150 mmHg

Correct Answer: (C) 120-130 mmHg

Solution: Negative pressure wound therapy (VAC) is commonly used to promote wound healing by applying controlled negative pressure. The typical range for negative pressure in VAC dressing is between 120-130 mmHg, which helps to promote granulation tissue formation and reduce edema.

Quick Tip

The optimal range for negative pressure in VAC dressing is 120-130 mmHg to effectively promote wound healing and tissue regeneration.

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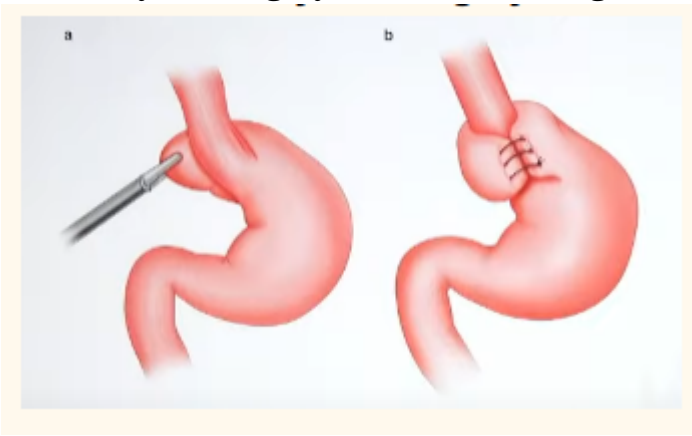
8. Identify the surgery shown in the image:



(A) Nissen's fundoplication

(B) Dor

Correct Answer: (A) Nissen's fundoplication

Solution: Nissen's fundoplication is a surgery performed to treat gastroesophageal reflux disease (GERD) by wrapping the top of the stomach (fundus) around the lower esophagus to prevent acid reflux.

Quick Tip

Nissen's fundoplication is commonly performed to treat GERD, reducing acid reflux by creating a barrier at the lower esophagus.

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9. Identify the structure marked in the intraoperative image of congenital inguinal hernia:

(A) Femoral vein

(B) Obturator vein

(C) Testicular vein

(D) Inferior epigastric vein

Correct Answer: (C) Testicular vein

Solution: In cases of congenital inguinal hernia, the testicular vein is a key structure that is often identified during surgery. It drains the testes and is important to protect during surgical correction of the hernia.

Quick Tip

The testicular vein should be identified and preserved during the repair of a congenital inguinal hernia to prevent damage to the venous drainage of the testes.

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10. What biopsy would you take from the lesion shown?

(A) Excisional

(B) Incisional

(C) Edge

Correct Answer: (C) Edge

Solution: An edge biopsy is typically performed when the lesion is too large to be removed completely. It involves taking a sample from the edges of the lesion to determine the nature of the disease.

Quick Tip

An edge biopsy is used when the lesion cannot be completely excised. It helps in obtaining tissue from the lesion's margins to analyze its pathology.

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11. How does a skin graft derive its nutrition on day 3?

(A) Plasma imbibition

(B) Inosculation

(C) Neovascularization

(D) None

Correct Answer: (B) Inosculation

Solution: On the third day after a skin graft, nutrition is primarily derived through inosculation, which is the process where the blood vessels of the graft connect with the recipient's blood vessels. This allows for the exchange of nutrients and oxygen to support the graft's survival.

Quick Tip

Inosculation is critical in the early stages after skin grafting, as it establishes blood supply between the graft and the recipient tissue.

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12. Identify the ulcer:

(A) Arterial

(B) Venous

(C) Trophic

(D) Diabetic foot ulcer

Correct Answer: (B) Venous

Solution: Venous ulcers are commonly caused by poor venous return, often due to varicose veins or venous insufficiency. These ulcers typically present as shallow, located in the lower extremities, and have irregular borders.

Quick Tip

Venous ulcers are often seen in the lower legs and are caused by poor venous circulation, leading to stagnation and skin breakdown.

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13. A 30-year-old female presented with swelling in the neck. What is the next step in evaluation?

(A) I131

(B) FNAC

(C) TSI T4

(D) FSH

Correct Answer: (C) TSI T4

Solution: For a neck swelling, the initial step in evaluating thyroid-related issues includes testing thyroid function, specifically TSH, T3, and T4 levels. Thyroid Stimulating Immunoglobulin (TSI) can also be measured if hyperthyroidism is suspected. This helps to differentiate between thyroid disorders such as hyperthyroidism, hypothyroidism, and others.

Quick Tip

Measuring thyroid hormones (TSH, T3, T4) is crucial for diagnosing thyroid disorders in patients with neck swelling.

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14. Identify the drain in the image:

(A) ROMOVAC

(B) JACKSON PRATT

(C) CORRUGATE

(D) PENROSE

Correct Answer: (A) ROMOVAC

Solution: The ROMOVAC is a type of closed-suction drain used to remove excess fluids from surgical sites. It uses negative pressure to draw out fluids and is commonly used after surgeries like breast surgery or abdominal surgery.

Quick Tip

ROMOVAC is a closed-suction drain, which is effective in preventing fluid accumulation and promoting wound healing after surgeries.

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15. A 5-year-old girl was washing her doll with shampoo containing a chemical Rotenone. Her mother notices her in an unconscious state. Which of the following complex is inhibited by the above-mentioned chemical?

(A) NADH Dehydrogenase

(B) Succinate DH

(C) Cytochrome C

(D) Cytochrome oxidase

Correct Answer: (A) NADH Dehydrogenase

Solution: Rotenone inhibits NADH dehydrogenase in the mitochondrial electron transport chain, disrupting the process of oxidative phosphorylation. This inhibition can lead to cellular energy failure and toxicity, resulting in symptoms like unconsciousness.

Quick Tip

Rotenone inhibits NADH dehydrogenase, disrupting ATP production and leading to cellular dysfunction and toxicity.

16. A patient presents with dilated cardiomyopathy on X-ray and hypoglycemia, floppy baby, hypotonia, hepatomegaly. What is the most likely diagnosis?

(A) Pompe's disease

(B) Von Gierke's disease

(C) Ebstein anomaly

Correct Answer: (A) Pompe's disease

Solution: Pompe's disease (Glycogen Storage Disease type II) is caused by a deficiency in the enzyme acid alpha-glucosidase, leading to glycogen accumulation in muscles and other tissues. This results in symptoms such as hypotonia, cardiomegaly, hepatomegaly, and hypoglycemia.

Quick Tip

Pompe's disease presents with early-onset cardiomyopathy, hypotonia, and hepatomegaly, which are due to glycogen accumulation in tissues.

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17. A 15-year-old child with difficulty in exercise, affected oxidation of long-chain fatty acids, and biopsy of muscle shows fat vacuoles. Which of the following is the diagnosis?

(A) Carnitine deficiency

(B) FA synthase defect

(C) LPL defect

(D) LDL defect

Correct Answer: (A) Carnitine deficiency

Solution: Carnitine deficiency impairs the transport of long-chain fatty acids into the mitochondria for oxidation, leading to the accumulation of fat vacuoles in muscle tissue. This can cause exercise intolerance, muscle weakness, and other symptoms of metabolic disturbance.

Quick Tip

Carnitine deficiency prevents the proper oxidation of long-chain fatty acids, leading to the accumulation of fat in muscle tissue and exercise intolerance.

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18. A farmer who was on maize as a staple diet develops a rash on the face, neck, and hands. Which of the following vitamins should be given in the treatment?

(A) Niacin

(B) Thiamine

Correct Answer: (A) Niacin

Solution: The symptoms described, such as a rash on the face, neck, and hands, are characteristic of pellagra, which is caused by a deficiency of niacin (vitamin B3). The treatment for pellagra is the administration of niacin.

Quick Tip

Pellagra is treated with niacin supplementation, especially in cases of malnutrition or where maize is a primary diet, as it is low in niacin.

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19. A patient develops mouth ulcers on treatment with Methotrexate. Which of the following will decrease with this drug?

(A) UMP

(B) TMP

(C) CMP

Correct Answer: (B) TMP

Solution: Methotrexate inhibits dihydrofolate reductase, leading to decreased synthesis of tetrahydrofolate. This results in a reduced supply of thymidine monophosphate (TMP), which is essential for DNA synthesis, thereby contributing to side effects like mouth ulcers.

Quick Tip

Methotrexate inhibits folate metabolism, leading to reduced TMP, which is necessary for DNA synthesis, contributing to side effects like mouth ulcers.

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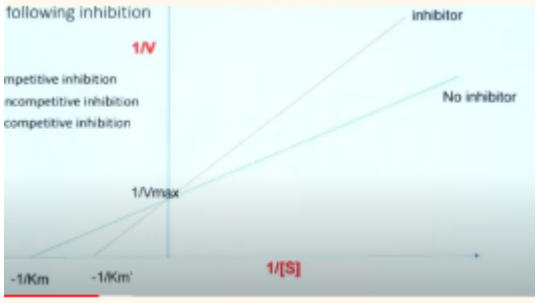
20. Increased Km and unchanged Vmax is seen in which of the following inhibition?



(A) Competitive inhibition

(B) Noncompetitive inhibition

(C) Uncompetitive inhibition

Correct Answer: (A) Competitive inhibition

Solution: In competitive inhibition, the inhibitor competes with the substrate for the active site of the enzyme, leading to an increase in the apparent Km (lower affinity) but no change in Vmax (the maximum reaction rate).

Quick Tip

In competitive inhibition, the inhibitor competes with the substrate, which increases the Km (affinity decreases), but Vmax remains unchanged.

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21. A drug is given for the treatment of hyperlipidemia. Facial flushing was noted. Which of the following drug causes this side effect?

(A) Nicotinic acid

(B) Statins

(C) Fibrates

(D) Ezetimibe

Correct Answer: (A) Nicotinic acid

Solution: Nicotinic acid (niacin) is a treatment for hyperlipidemia that is known to cause facial flushing as a side effect. This occurs due to the dilation of blood vessels, and the side effect can be minimized by taking aspirin or other medications.

Quick Tip

Facial flushing is a well-known side effect of niacin (nicotinic acid) when used to treat hyperlipidemia, and it can be managed with aspirin.

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22. Increased chylomicron, lipemic serum is seen in:

(A) Lipoprotein lipase deficiency

(B) Hypercholesterolemia

(C) Familial hyperlipidemia

(D) Hypertriglyceridemia

Correct Answer: (A) Lipoprotein lipase deficiency

Solution: Lipoprotein lipase deficiency leads to the accumulation of chylomicrons in the blood, causing lipemic serum and increased levels of triglycerides. This condition results in difficulty in clearing triglyceride-rich lipoproteins after meals, leading to symptoms such as abdominal pain, pancreatitis, and lipemia.

Quick Tip

Lipoprotein lipase deficiency results in the accumulation of chylomicrons, leading to lipemic serum and increased triglycerides in the blood.

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23. Which micronutrient deficiency causes anemia, gum bleeding, and X-ray changes - White Frankel line?

(A) Copper

(B) Iron

(C) Zinc

Correct Answer: (B) Iron

Solution: Iron deficiency is a common cause of anemia, leading to symptoms such as fatigue, weakness, and pallor. The condition can also result in gum bleeding and X-ray changes, specifically the ”White Frankel line,” which refers to changes in the bones, especially in children with severe iron deficiency.

Quick Tip

Iron deficiency can lead to anemia, gum bleeding, and characteristic bone changes, such as the White Frankel line, seen in X-ray images.

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24. Which of the following enzymes is deficient in a patient with Phenylketonuria if phenylalanine hydroxylase level is normal?

(A) Dihydrobiopterin reductase

(B) Phenylalanine hydroxylase

(C) Tyrosine aminotransferase

(D) Dihydropteridine reductase

Correct Answer: (A) Dihydrobiopterin reductase

Solution: Phenylketonuria (PKU) is typically due to a deficiency in phenylalanine hydroxylase. However, if phenylalanine hydroxylase is normal, the condition could be caused by a deficiency in dihydrobiopterin reductase, which is responsible for recycling tetrahydrobiopterin, a cofactor necessary for phenylalanine hydroxylase activity.

Quick Tip

In cases of PKU with normal phenylalanine hydroxylase levels, dihydrobiopterin reductase deficiency can cause a similar metabolic disturbance.

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25. A tall stature, long digits, long arm span, and subluxation of the lens is seen in which of the following defects?

(A) Fibrillin 1

(B) Collagen

Correct Answer: (A) Fibrillin 1

Solution: The described features—tall stature, long digits (arachnodactyly), long arm span, and lens subluxation—are characteristic of Marfan syndrome, which is caused by mutations in the fibrillin-1 gene. This connective tissue disorder affects the musculoskeletal, ocular, and cardiovascular systems.

Quick Tip

Marfan syndrome is caused by mutations in the fibrillin-1 gene, leading to features such as tall stature, arachnodactyly, and lens subluxation.

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26. A male patient with pallor, weakness, and easy fatigability. His blood report shows MCV 53, TIBC- Increased. What is your diagnosis?

(A) Iron deficiency anemia

(B) Vitamin B12 deficiency

(C) Folate deficiency

(D) Thalassemia

Correct Answer: (A) Iron deficiency anemia

Solution: The patient's presentation of pallor, weakness, and easy fatigability, along with laboratory findings of microcytic anemia (MCV 53) and increased total iron-binding capacity (TIBC), points to iron deficiency anemia. This is a common cause of microcytic anemia.

Quick Tip

Iron deficiency anemia presents with low MCV and increased TIBC, making it the most common cause of microcytic anemia.

27. Which of the following is methanol poisoning derivatives?

(A) Formic acid + Lactic acid

(B) Acetic acid

Correct Answer: (A) Formic acid + Lactic acid

Solution: Methanol poisoning leads to the production of formic acid and lactic acid as its toxic metabolites. These metabolites are responsible for the metabolic acidosis and ocular toxicity observed in methanol poisoning.

Quick Tip

Formic acid and lactic acid are the toxic metabolites formed in methanol poisoning, leading to metabolic acidosis and other complications.