NEET PG 2025 Memory based Question Paper

Q1. Which of the following cranial nerves is responsible for the motor innervation of the muscles of mastication?

(a) Trigeminal nerve
(b) Facial nerve
(c) Glossopharyngeal nerve
(d) Hypoglossal nerve

Correct Answer: (a) Trigeminal nerve

Solution: The muscles of mastication (masseter, temporalis, medial and lateral pterygoid) are innervated by the **mandibular division (V3) of the trigeminal nerve (cranial nerve V)**. This branch carries motor fibers to these muscles, enabling chewing. The other options have different functions:
- Facial nerve (CN VII) supplies muscles of facial expression, not mastication.
- Glossopharyngeal nerve (CN IX) is involved in taste and swallowing.
- Hypoglossal nerve (CN XII) controls tongue movement.

Quick Tip

Remember: Trigeminal nerve (V) = sensory to face + motor to muscles of mastication.

Q2. The primary source of energy for Earth's climate system is:

(a) Geothermal energy
(b) Solar radiation

(c) Tidal energy

(d) Nuclear energy

Correct Answer: (b) Solar radiation

Solution: Earth's climate system is powered primarily by **solar radiation**, which drives weather patterns, ocean currents, and the global climate. While geothermal, tidal, and nuclear energy contribute in small amounts, their effect on the climate system is minimal compared to the sun's energy.

Quick Tip

About 99.97% of Earth's energy budget comes from the Sun.

Q3. Which enzyme is deficient in Gaucher's disease?

(a) Hexosaminidase A

(b) Glucocerebrosidase

(c) Alpha-galactosidase A

(d) Sphingomyelinase

Correct Answer: (b) Glucocerebrosidase

Solution: Gaucher's disease is a **lysosomal storage disorder** caused by deficiency of the enzyme **glucocerebrosidase**. This leads to accumulation of glucocerebroside in macrophages, producing Gaucher cells. The other enzymes are associated with different disorders:

- Hexosaminidase A — Tay-Sachs disease
- Alpha-galactosidase A — Fabry disease
- Sphingomyelinase — Niemann-Pick disease

Quick Tip

Mnemonic: “Gaucher = Gluco” for glucocerebrosidase deficiency.

Q4. The most common site of metastasis for breast cancer is:

(a) Brain

(b) Liver

(c) Bone

(d) Lung

Correct Answer: (c) Bone

Solution: Breast cancer frequently metastasizes to bone, especially the spine, ribs, and pelvis. Bone metastases are common due to the tumor’s tendency to spread via the bloodstream to the bone marrow microenvironment. Other common metastatic sites include the liver, lungs, and brain, but bone remains the most frequent.

Quick Tip

In breast cancer, think “BLB” — Bone, Liver, Brain as common metastasis sites, with Bone being the most frequent.

Q5. Which of the following is a loop diuretic?

(a) Spironolactone

(b) Furosemide

(c) Hydrochlorothiazide

(d) Acetazolamide

Correct Answer: (b) Furosemide

Solution: Loop diuretics act on the **thick ascending limb of the loop of Henle**, inhibiting the Na^+-K^+-$2Cl^-$ co-transporter, leading to increased excretion of sodium, potassium, and chloride, along with water. **Furosemide** is a potent loop diuretic, used in conditions like pulmonary edema, heart failure, and hypertension.

- Spironolactone is a potassium-sparing diuretic (aldosterone antagonist).
- Hydrochlorothiazide is a thiazide diuretic acting on the distal tubule.
- Acetazolamide is a carbonic anhydrase inhibitor.

Quick Tip

Loop diuretics = "Furo for Fluid" — strong action, quick relief in fluid overload.

Q6. The normal pH of arterial blood is:

(a) 7.0–7.2

(b) 7.35–7.45

(c) 7.5–7.6

(d) 6.8–7.0

Correct Answer: (b) 7.35–7.45

Solution: Normal arterial blood pH is tightly regulated between **7.35 and 7.45**. This balance is maintained by buffer systems (bicarbonate), respiratory regulation (CO_2 exhalation), and renal excretion of hydrogen ions. Values below 7.35 indicate acidosis; values above 7.45 indicate alkalosis.

Quick Tip

pH homeostasis is vital — small deviations can significantly impair enzyme activity and cellular function.

Q7. Which of the following is a characteristic feature of Parkinson's disease?

(a) Bradykinesia

(b) Chorea

(c) Myoclonus

(d) Dystonia

Correct Answer: (a) Bradykinesia

Solution: Bradykinesia (slowness of movement) is a hallmark symptom of Parkinson's disease, along with resting tremor, rigidity, and postural instability. It results from degeneration of dopaminergic neurons in the substantia nigra, leading to basal ganglia dysfunction.
- Chorea: rapid, jerky movements (seen in Huntington's disease)
- Myoclonus: sudden, brief muscle jerks
- Dystonia: sustained muscle contractions causing abnormal postures

Quick Tip

Parkinson's disease core triad: Tremor (resting), Rigidity, Bradykinesia.

Q8. The primary auditory cortex is located in which lobe of the brain?

(a) Frontal

(b) Parietal

(c) Temporal

(d) Occipital

Correct Answer: (c) Temporal

Solution: The **primary auditory cortex** is located in the **superior temporal gyrus of the temporal lobe**, specifically in the transverse temporal gyri (Heschl's gyri). It is responsible for processing auditory information such as pitch, volume, and sound localization.

- Frontal lobe: motor function, speech production
- Parietal lobe: sensory integration, spatial awareness
- Occipital lobe: visual processing

Quick Tip

Temporal lobe = "Tempo" = sound and music processing.

Q9. Which vitamin deficiency is associated with Wernicke's encephalopathy?

(a) Vitamin B1

(b) Vitamin B6

(c) Vitamin B12

(d) Vitamin D

Correct Answer: (a) Vitamin B1

Solution: Wernicke's encephalopathy is caused by **thiamine (vitamin B1) deficiency**, commonly seen in chronic alcoholism, malnutrition, and prolonged vomiting. It is characterized by the triad of **ophthalmoplegia, ataxia, and confusion**. Thiamine is an essential coenzyme in carbohydrate metabolism; deficiency impairs neuronal energy metabolism.

Quick Tip

Always give thiamine before glucose in suspected B1 deficiency to avoid precipitating Wernicke's encephalopathy.

Q10. The causative organism of syphilis is:

(a) Neisseria gonorrhoeae

(b) Treponema pallidum

(c) Chlamydia trachomatis

(d) Haemophilus ducreyi

Correct Answer: (b) Treponema pallidum

Solution: Syphilis is a sexually transmitted infection caused by the spirochete bacterium **Treponema pallidum**. It progresses through primary, secondary, latent, and tertiary stages, with diverse clinical features from painless chancres to neurological and cardiovascular complications. Diagnosis is via serology (VDRL, RPR, FTA-ABS).

Quick Tip

Remember: Syphilis = Spirochete = Treponema pallidum.

Q11. Which of the following drugs is a first-line treatment for tuberculosis?

(a) Amoxicillin

(b) Isoniazid

(c) Ciprofloxacin

(d) Azithromycin

Correct Answer: (b) Isoniazid

Solution: Isoniazid is one of the first-line drugs for tuberculosis, usually given in combination with rifampicin, pyrazinamide, and ethambutol during the initial phase of treatment. It inhibits mycolic acid synthesis in the Mycobacterium tuberculosis cell wall. Other options listed are not first-line anti-TB drugs.

Quick Tip

First-line TB drugs: RIPE — Rifampicin, Isoniazid, Pyrazinamide, Ethambutol.

Q12. The most common type of anemia worldwide is:

(a) Sickle cell anemia

(b) Thalassemia

(c) Iron deficiency anemia

(d) Megaloblastic anemia

Correct Answer: (c) Iron deficiency anemia

Solution: Iron deficiency anemia is the most common anemia globally, caused by inadequate iron intake, chronic blood loss, or increased demand (e.g., pregnancy). It results in microcytic, hypochromic red blood cells. Symptoms include fatigue, pallor, and, in severe cases, pica and koilonychia.

Quick Tip

In microcytic anemia, think "TAIL" — Thalassemia, Anemia of chronic disease, Iron deficiency, Lead poisoning.

Q13. Which structure forms the roof of the third ventricle?

(a) Corpus callosum

(b) Fornix

(c) Tela choroidea

(d) Septum pellucidum

Correct Answer: (b) Fornix

Solution: The **fornix** forms part of the roof of the third ventricle, lying beneath the corpus callosum. The tela choroidea forms part of the roof in the posterior region, but anatomically the fornix is the main structure forming the upper boundary.

- Corpus callosum: connects cerebral hemispheres, not part of ventricular roof
- Septum pellucidum: thin membrane between lateral ventricles
- Tela choroidea: thin vascular membrane associated with choroid plexus, but not the main roof

Quick Tip

The fornix = major output tract of the hippocampus, also forms the roof of the third ventricle.

Q14. The hallmark feature of diabetic ketoacidosis is:

(a) Hyperglycemia
(b) Hypoglycemia
(c) Hypernatremia
(d) Hyponatremia

Correct Answer: (a) Hyperglycemia

Solution: Diabetic ketoacidosis (DKA) is characterized by **hyperglycemia**, ketonemia, and metabolic acidosis. It occurs due to absolute insulin deficiency (usually in type 1 diabetes), leading to uncontrolled lipolysis and ketone production. Common features include polyuria, polydipsia, dehydration, and fruity odor breath.

Quick Tip

DKA = "Hyperglycemia + Ketones + Acidosis" — treat with fluids, insulin, and electrolyte correction.

Q15. Which of the following is a beta-lactam antibiotic?

(a) Vancomycin

(b) Amoxicillin

(c) Erythromycin

(d) Doxycycline

Correct Answer: (b) Amoxicillin

Solution: **Amoxicillin** is a beta-lactam antibiotic belonging to the penicillin group. Beta-lactams inhibit bacterial cell wall synthesis by binding to penicillin-binding proteins.
- Vancomycin: glycopeptide antibiotic
- Erythromycin: macrolide antibiotic
- Doxycycline: tetracycline antibiotic

Quick Tip

Beta-lactams include penicillins, cephalosporins, carbapenems, and monobactams.

Q16. The most common site of ectopic pregnancy is:

(a) Ovary

(b) Fallopian tube

(c) Cervix

(d) Uterus

Correct Answer: (b) Fallopian tube

Solution: Over 95% of ectopic pregnancies occur in the **fallopian tube**, most often in the ampullary region. This occurs when the fertilized egg implants outside the uterine cavity. Risk factors include pelvic inflammatory disease, tubal surgery, and previous ectopic pregnancy.

Quick Tip

Remember: “Ampulla is the commonest site” for ectopic pregnancy.

Q17. Which hormone is responsible for milk ejection during breastfeeding?

(a) Prolactin

(b) Oxytocin

(c) Estrogen

(d) Progesterone

Correct Answer: (b) Oxytocin

Solution: Oxytocin, secreted by the posterior pituitary, is responsible for the **milk ejection reflex** (let-down reflex) during breastfeeding. It causes contraction of myoepithelial cells in the mammary glands, pushing milk into the ducts.

- Prolactin (anterior pituitary) stimulates milk production, not ejection.

- Estrogen and progesterone are involved in breast development and pregnancy maintenance, not in milk release.

Quick Tip

Remember: Prolactin = production, Oxytocin = ejection.

Q18. The Reed-Sternberg cell is a hallmark of which condition?

(a) Non-Hodgkin lymphoma

(b) Hodgkin lymphoma

(c) Chronic lymphocytic leukemia

(d) Multiple myeloma

Correct Answer: (b) Hodgkin lymphoma

Solution: Reed-Sternberg cells are large, abnormal B lymphocytes with characteristic "owl's eye" nuclei, pathognomonic for Hodgkin lymphoma. Their presence in lymph node biopsy confirms the diagnosis.

Quick Tip

Reed-Sternberg = "Owl's eye" cells $\rightarrow$ Hodgkin lymphoma.

Q19. Which of the following is a feature of Cushing's syndrome?

(a) Weight loss

(b) Moon facies

(c) Hypotension

(d) Hypoglycemia

Correct Answer: (b) Moon facies

Solution: Cushing's syndrome results from prolonged exposure to high cortisol levels. Clinical features include **moon facies**, central obesity, buffalo hump, muscle weakness, hypertension, and hyperglycemia. Moon facies refers to a rounded face due to fat deposition.

Quick Tip

Cushing's = high cortisol $\rightarrow$ central fat, muscle wasting, skin changes, and moon facies.

Q20. The causative agent of malaria is:

(a) Trypanosoma cruzi

(b) Plasmodium species

(c) Leishmania donovani

(d) Toxoplasma gondii

Correct Answer: (b) Plasmodium species

Solution: Malaria is caused by protozoan parasites of the genus **Plasmodium** — mainly P. falciparum, P. vivax, P. ovale, and P. malariae — transmitted via the bite of the female Anopheles mosquito. It presents with fever, chills, anemia, and splenomegaly.

Quick Tip

Plasmodium falciparum is the most severe; P. vivax is most widespread.

Q21. Which of the following is a side effect of long-term corticosteroid use?

(a) Osteoporosis

(b) Hypoglycemia

(c) Hyperkalemia

(d) Weight loss

Correct Answer: (a) Osteoporosis

Solution: Long-term corticosteroid use can lead to **osteoporosis** due to decreased calcium absorption, increased calcium excretion, and inhibition of bone formation. Other side effects include hyperglycemia, hypertension, Cushingoid appearance, and increased infection risk.
- Hypoglycemia is not typical; steroids usually cause hyperglycemia.
- Hyperkalemia is not common; corticosteroids tend to cause hypokalemia.
- Weight loss is not typical; weight gain is more common.

Quick Tip

In chronic steroid use: think "CUSHINGOID" — Cushing's features, Osteoporosis, Immunosuppression, Diabetes.

Q22. The most common cause of bacterial meningitis in adults is:

(a) Escherichia coli

(b) Streptococcus pneumoniae

(c) Listeria monocytogenes

(d) Haemophilus influenzae

Correct Answer: (b) Streptococcus pneumoniae

Solution: Streptococcus pneumoniae is the leading cause of bacterial meningitis in adults. It can follow respiratory tract infections or occur spontaneously, especially in immunocompromised individuals.

- E. coli is a common cause in neonates.

- Listeria monocytogenes is common in elderly or immunocompromised patients.

- Haemophilus influenzae type b was once common in children but has declined with vaccination.

Quick Tip

In adults: S. pneumoniae and N. meningitidis are top causes; in neonates: GBS and E. coli.

Q23. Which of the following is a feature of rheumatoid arthritis?

(a) Heberden's nodes

(b) Morning stiffness

(c) Asymmetrical joint involvement

(d) Bone spurs

Correct Answer: (b) Morning stiffness

Solution: Rheumatoid arthritis (RA) is an autoimmune inflammatory arthritis characterized by **morning stiffness** lasting more than 1 hour, symmetrical joint involvement, and joint swelling.

- Heberden's nodes are seen in osteoarthritis.
- Asymmetrical joint involvement is more typical of psoriatic arthritis.
- Bone spurs (osteophytes) are a feature of osteoarthritis.

Quick Tip

RA: Symmetrical, autoimmune, long morning stiffness — OA: Asymmetrical, short stiffness, bone spurs.

Q24. The anticoagulant effect of heparin is monitored using:

(a) INR

(b) aPTT

(c) PT

(d) Bleeding time

Correct Answer: (b) aPTT

Solution: The anticoagulant effect of unfractionated heparin is monitored using the **activated partial thromboplastin time (aPTT)**, which assesses the intrinsic and common coagulation pathways.

- INR and PT are used for warfarin monitoring.
- Bleeding time measures platelet function, not coagulation pathways.

Quick Tip

Heparin $\rightarrow$ aPTT; Warfarin $\rightarrow$ PT/INR.

Q25. Which of the following is a complication of untreated hypertension?

(a) Hypoglycemia

(b) Heart failure

(c) Hyperthyroidism

(d) Osteoarthritis

Correct Answer: (b) Heart failure

Solution: Chronic untreated hypertension increases afterload on the heart, leading to left ventricular hypertrophy and eventually **heart failure**. It can also cause stroke, chronic kidney disease, and retinopathy.

- Hypoglycemia is unrelated.
- Hyperthyroidism is an endocrine disorder, not a direct hypertension complication.
- Osteoarthritis is a degenerative joint disease unrelated to blood pressure.

Quick Tip

Hypertension damages heart, brain, kidneys, and eyes — "target organ damage."

Q26. The most common type of skin cancer is:

(a) Melanoma

(b) Basal cell carcinoma

(c) Squamous cell carcinoma

(d) Merkel cell carcinoma

Correct Answer: (b) Basal cell carcinoma

Solution: Basal cell carcinoma (BCC) is the most common skin cancer. It arises from the basal cells of the epidermis and is strongly associated with chronic sun exposure. BCC is slow-growing and rarely metastasizes, but can cause local destruction.

- Melanoma is more aggressive but less common.
- Squamous cell carcinoma is the second most common skin cancer.
- Merkel cell carcinoma is rare but highly aggressive.

Quick Tip

"BCC = most common, least dangerous; Melanoma = less common, most dangerous."

Q27. Which of the following is a hallmark of acute pancreatitis?

(a) Elevated amylase and lipase

(b) Decreased amylase and lipase

(c) Elevated bilirubin

(d) Decreased alkaline phosphatase

Correct Answer: (a) Elevated amylase and lipase

Solution: Acute pancreatitis is characterized by **elevated serum amylase and lipase**, with lipase being more specific. Common causes include gallstones, alcohol use, hypertriglyceridemia, and certain drugs. Elevated enzymes reflect pancreatic injury and inflammation.

Quick Tip

"Acute pancreatitis: Lipase ¿ Amylase for diagnosis."

Q28. The drug of choice for absence seizures is:

(a) Phenytoin

(b) Carbamazepine

(c) Ethosuximide

(d) Valproic acid

Correct Answer: (c) Ethosuximide

Solution: **Ethosuximide** is the first-line drug for absence seizures. It works by blocking T-type calcium channels in thalamic neurons, preventing the abnormal rhythmic firing that causes absence seizures.

- Valproic acid is used if ethosuximide is ineffective or if there are mixed seizure types.

- Phenytoin and carbamazepine are not effective for absence seizures and may worsen them.

Quick Tip

Absence seizures: “Ethosuximide — it Sux to have Silent Seizures.”
