OJEE 2026 M.Sc Nursing

Question Paper (Memory-Based) with Solutions

Conducted by Odisha Joint Entrance Examination Committee (OJEEC)

General Instructions

(i) The examination will be conducted in Computer-Based Test (CBT) mode.

(ii) Each question carries +1 marks for correct answer and no negative marking for wrong answer.

(iii) The total number of questions are 100.

(iv) Duration of the exam is 2 hours (120 minutes).

1. The union of ovum and sperm is known as

(A). Placentation

(B). Ovulation

(C). Folification

(D). Fertilization

Correct Answer: (D) Fertilization

Solution:

Step 1: Understanding the Question:

The question asks for the biological term that describes the fusion of an ovum (egg cell) and a sperm cell.

Step 3: Detailed Explanation:

* **Fertilization:** This is the process where a male gamete (sperm) fuses with a female gamete (ovum or egg) to form a zygote. This event marks the beginning of embryonic development in sexual reproduction.

* **Placentation:** This refers to the formation or arrangement of the placenta in the uterus,

which provides nourishment to the developing fetus.

* **Ovulation:** This is the process by which a mature egg is released from the ovary.

* **Folification:** This term is not standard in biology. It might be a misspelling or an unfamiliar term. The process of follicle development is folliculogenesis.

Therefore, the union of ovum and sperm is known as fertilization.

Step 4: Final Answer:

The union of ovum and sperm is known as Fertilization.

Quick Tip: Remember the distinct stages of reproduction: Ovulation (egg release), Fertilization (sperm-egg fusion), Implantation (zygote attachment), Placentation (placenta formation).

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2. The nurse makes that the diet consumed by PEM child is rich in

(A). Fats and vitamins

(B). Water soluble vitamins

(C). Micro nutrient

(D). Protein, carbohydrates and vitamins

Correct Answer: (D) Protein, carbohydrates and vitamins

Solution:

Step 1: Understanding the Question:

The question asks about the essential dietary components needed for a child suffering from Protein-Energy Malnutrition (PEM).

Step 3: Detailed Explanation:

* **Protein-Energy Malnutrition (PEM):** This is a severe form of malnutrition characterized by a deficiency of both protein and energy (calories). It encompasses conditions like marasmus (severe wasting due to chronic energy deficiency) and kwashiorkor (severe protein deficiency with adequate calories).

* **Dietary Needs for PEM:** Children with PEM require a diet that is rich in all macronutrients

(protein for tissue repair and growth, carbohydrates for energy) and micronutrients (vitamins and minerals) to restore their nutritional status and promote recovery.

* **Option Analysis:**

- (A) Fats and vitamins: While important, fats alone are insufficient, and carbohydrates are also vital for energy.
- (B) Water soluble vitamins: These are micronutrients, essential but not the primary deficiency in PEM.
- (C) Micro nutrient: Too general; PEM is about macronutrient deficiency primarily.
- (D) Protein, carbohydrates and vitamins: This option correctly identifies the key macronutrients (protein and carbohydrates) and micronutrients (vitamins) needed to address the broad deficiencies in PEM.

Therefore, a diet rich in protein, carbohydrates, and vitamins is crucial for a child with PEM.

Step 4: Final Answer:

The nurse makes sure that the diet consumed by PEM child is rich in Protein, carbohydrates and vitamins.

Quick Tip: Remember that PEM is a comprehensive nutritional deficiency. Therefore, a holistic approach involving all essential macronutrients and micronutrients is required for treatment.

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3. The position of patient during immediate postoperative period of tonsillectomy surgery is

(A). Sim's position

(B). Rose position

(C). Prone position

(D). Lateral position

Correct Answer: (D) Lateral position

Solution:

Step 1: Understanding the Question:

The question asks about the safest and most appropriate patient positioning immediately after

a tonsillectomy surgery.

Step 3: Detailed Explanation:

* **Tonsillectomy Risks:** After tonsillectomy, the primary risk in the immediate postoperative period is airway obstruction due to swelling or bleeding, and aspiration of blood or secretions.
* **Lateral Position:** Placing the patient in a **lateral position** (on their side) with the head slightly down or neutral helps to:
- Facilitate drainage of blood and secretions from the mouth and pharynx, preventing aspiration.
- Keep the airway open and clear.
- Reduce the risk of pressure on the operative site.
* **Other Positions:**
- **Sim's position:** A semi-prone position, not ideal for immediate tonsillectomy recovery.
- **Rose position:** Hyperextension of the neck; used during surgery to visualize the operative site, but not appropriate postoperatively due to potential for airway compromise.
- **Prone position:** Lying on the stomach; could obstruct the airway or put pressure on the surgical site.

Therefore, the lateral position is crucial for maintaining a clear airway and preventing complications in the immediate postoperative period after tonsillectomy.

Step 4: Final Answer:

The patient should be placed in the Lateral position.

Quick Tip: For surgeries involving the oral cavity or throat, the primary post-operative concern is always airway management and preventing aspiration. Positions that facilitate drainage and prevent the tongue from falling back are preferred.

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4. The study of distribution and determinants of the disease is called

(A). Community

(B). Epidemiology

(C). Pathology

(D). Entomology

Correct Answer: (B) Epidemiology

Solution:

Step 1: Understanding the Question:

The question asks for the scientific discipline dedicated to studying the patterns and causes of diseases within populations.

Step 3: Detailed Explanation:

* **Epidemiology:** This is the branch of medicine that deals with the incidence, distribution, and possible control of diseases and other factors relating to health. It focuses on how diseases are distributed (who, where, when) and what determines their occurrence (risk factors, causes).
* **Community:** This refers to a group of people living in the same place or having a particular characteristic in common, not a field of study.
* **Pathology:** This is the study of the causes and effects of diseases, specifically focusing on the structural and functional changes in tissues and organs due to disease. It primarily studies disease at the individual and tissue level.
* **Entomology:** This is the scientific study of insects.

Therefore, the study of the distribution and determinants of disease is epidemiology.

Step 4: Final Answer:

The study is called Epidemiology.

Quick Tip: Remember:

- Epidemiology: Disease patterns and causes in populations.
- Pathology: Disease mechanisms and effects in individuals/tissues.
- Etiology: Study of disease causes.
- Prognosis: Prediction of disease outcome.

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5. The scientific method of study of human population is

(A). Demography

(B). Sociology

(C). Ecology

(D). Anthropology

Correct Answer: (A) Demography

Solution:

Step 1: Understanding the Question:

The question asks for the scientific discipline concerned with the statistical study of human populations.

Step 3: Detailed Explanation:

* **Demography:** This is the statistical study of human populations, especially with reference to size, density, distribution, and vital statistics (births, deaths, migration, aging). It analyzes population dynamics and characteristics.
* **Sociology:** This is the study of human society, social behavior, patterns of social relationships, interaction, and culture.
* **Ecology:** This is the scientific study of the relationships between living organisms and their environment, often focusing on population dynamics in broader ecosystems.
* **Anthropology:** This is the study of humanity, human behavior, human biology, cultures, societies, and linguistics in both the present and past.

Therefore, the scientific method of study of human population is demography.

Step 4: Final Answer:

The study is Demography.

Quick Tip: Demography = "demo" (people) + "graphy" (writing/description) → statistical description of populations. Sociology = "socio" (society) + "ology" (study) → study of society.

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6. Which NSAID undergoes enterohepatic circulation?

(A). Piroxicam

(B). Ibuprofen

(C). Aspirin

(D). Phenylbutaxone

Correct Answer: (B) Ibuprofen

Solution:

Step 1: Understanding the Question:

The question asks to identify which of the listed Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) undergoes enterohepatic circulation.

Step 3: Detailed Explanation:

* **Enterohepatic circulation:** This is the recirculation of substances (like drugs, bile acids) from the liver to the bile, then to the small intestine, and finally back to the liver via the portal vein. This process can prolong the half-life of a drug.
* **Ibuprofen:** Ibuprofen is known to undergo enterohepatic circulation. After absorption, it is metabolized in the liver, primarily by glucuronidation. These glucuronide conjugates are then excreted into the bile, re-enter the intestine, and can be deconjugated by gut bacteria, releasing free ibuprofen, which is then reabsorbed, thus prolonging its presence in the body.
* **Piroxicam:** While it has a long half-life, enterohepatic recirculation is not its primary characteristic.
* **Aspirin (acetylsalicylic acid):** It is rapidly hydrolyzed to salicylic acid, which is then excreted. It does not undergo significant enterohepatic circulation in its active form.
* **Phenylbutazone:** This is an older NSAID, known for serious side effects, and while it undergoes metabolism, enterohepatic circulation is not its defining pharmacokinetic feature in this context.

Therefore, Ibuprofen is the NSAID among the options that prominently undergoes enterohepatic circulation.

Step 4: Final Answer:

Ibuprofen undergoes enterohepatic circulation.

Quick Tip: Remember that enterohepatic circulation can significantly extend a drug's half-life and duration of action. For NSAIDs, ibuprofen is a key example of a drug that utilizes this pathway.

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7. Ortolani is a test performed to find out

(A). Congenital hip dislocation

(B). Fractures

(C). Bone injuries

(D). Club foot

Correct Answer: (A) Congenital hip dislocation

Solution:

Step 1: Understanding the Question:

The question asks to identify the medical condition for which the Ortolani test is specifically performed.

Step 3: Detailed Explanation:

* **Ortolani Test:** The Ortolani test is a clinical maneuver used by healthcare providers (especially pediatricians) to screen infants for **developmental dysplasia of the hip (DDH)**, also known as congenital hip dislocation.

* **Procedure:** It involves abducting (moving away from the midline) the hips while applying gentle upward pressure. A positive sign (Ortolani click or clunk) indicates that a dislocated femoral head has been reduced (relocated) into the acetabulum.

* **Other conditions:**

- Fractures and bone injuries are diagnosed through palpation, imaging (X-rays), and assessing pain/mobility.

- Club foot (talipes equinovarus) is a congenital deformity of the foot, diagnosed by visual inspection and foot manipulation.

Therefore, the Ortolani test is specifically for congenital hip dislocation.

Step 4: Final Answer:

Ortolani is a test performed to find out Congenital hip dislocation.

Quick Tip: Associate specific clinical maneuvers with their diagnostic purpose. Ortolani and Barlow tests are classic screening tools for hip dysplasia in infants.

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8. The nurse interprets a positive Homans sign as

(A). Stroke

(B). Pulmonary embolism

(C). Deep venous thrombosis

(D). Pneumothorax

Correct Answer: (C) Deep venous thrombosis

Solution:

Step 1: Understanding the Question:

The question asks for the medical condition indicated by a positive Homans sign.

Step 3: Detailed Explanation:

* **Homans Sign:** This is a physical examination finding that was historically used to assess for **deep venous thrombosis (DVT)**. It involves forcibly dorsiflexing the foot (pulling the toes upwards towards the shin) while the patient's knee is extended. Pain in the calf or popliteal region (behind the knee) with this maneuver is considered a positive Homans sign.
* **DVT:** DVT is a condition where a blood clot (thrombus) forms in a deep vein, usually in the leg.
* **Clinical Relevance:** While the Homans sign is classically associated with DVT, its diagnostic value is limited, and it is not a highly sensitive or specific test. Modern diagnostic approaches for DVT rely more on imaging studies (like ultrasound). However, in a theoretical context, it is associated with DVT.
* **Other conditions:**

- Stroke: Neurological event, diagnosed with brain imaging.
- Pulmonary embolism: Blood clot in the lungs, often a complication of DVT, but Homans sign directly points to DVT in the leg.
- Pneumothorax: Collapsed lung, diagnosed with chest imaging.

Therefore, a positive Homans sign is interpreted as an indicator of deep venous thrombosis.

Step 4: Final Answer:

A positive Homans sign is interpreted as Deep venous thrombosis.

Quick Tip: Associate specific clinical signs with the conditions they are meant to detect. Homans sign = DVT (though not definitive). Always be aware of the sensitivity and specificity of clinical tests.

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9. Glycosuria occurs when Plasma glucose level exceeds

(A). 120-140mg/dl

(B). 160-180mg/dl

(C). 130-150mg/dl

(D). 100-120mg/dl

Correct Answer: (B) 160-180mg/dl

Solution:

Step 1: Understanding the Question:

The question asks about the plasma glucose concentration threshold at which glycosuria (glucose in the urine) typically occurs.

Step 3: Detailed Explanation:

* **Glycosuria:** This condition refers to the excretion of glucose into the urine. Under normal circumstances, the kidneys reabsorb almost all the filtered glucose back into the bloodstream.
* **Renal Threshold for Glucose:** The kidneys have a maximum capacity to reabsorb glucose from the glomerular filtrate, known as the renal threshold for glucose. When the plasma glucose level exceeds this threshold, the renal tubules cannot reabsorb all of it, and the excess glucose is excreted in the urine.
* For most healthy individuals, the renal threshold for glucose is typically between **160-180 mg/dL** (or approximately 9-10 mmol/L). In patients with diabetes mellitus, this threshold might be altered.

Therefore, glycosuria generally occurs when the plasma glucose level exceeds 160-180 mg/dL.

Step 4: Final Answer:

Glycosuria occurs when Plasma glucose level exceeds 160-180mg/dl.

Quick Tip: Remember the normal fasting blood glucose levels (<100 mg/dL) and the renal threshold for glucose (around 180 mg/dL). This helps understand conditions like diabetes and kidney function related to glucose.

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10. Virulence of a disease is indicated by

(A). Proportional mortality rate

(B). Morbidity rate

(C). Case fatality ratio

(D). Specific morality rate

Correct Answer: (C) Case fatality ratio

Solution:

Step 1: Understanding the Question:

The question asks for the epidemiological measure that best indicates the virulence of a disease. Virulence refers to the severity of a disease or its ability to cause severe disease or death.

Step 3: Detailed Explanation:

* **Case Fatality Ratio (CFR):** CFR is the proportion of individuals diagnosed with a disease who die from that disease, within a specified period. It is calculated as:

$$\text{CFR} = \frac{\text{Number of deaths from a specific disease}}{\text{Number of confirmed cases of that disease}} \times 100$$

A high CFR indicates that the disease is very severe and likely to cause death among those infected, thus directly reflecting its **virulence**.

* **Proportional mortality rate:** This is the proportion of all deaths that are due to a specific disease or cause. It tells about the relative importance of a cause of death but not necessarily its severity among those infected.

* **Morbidity rate:** This refers to the rate of disease in a population (e.g., incidence or prevalence). It indicates how often a disease occurs or exists but not its severity or deadliness.
* **Specific mortality rate:** This is a mortality rate calculated for a specific subgroup (e.g., age-specific mortality rate) or for a specific disease. While it indicates deaths, CFR is more directly a measure of severity among cases.
Therefore, the case fatality ratio is the best indicator of a disease's virulence.

Step 4: Final Answer:
Virulence of a disease is indicated by Case fatality ratio.

Quick Tip: Remember:
- Morbidity: Sickness/disease occurrence.
- Mortality: Death occurrence.
- Virulence: Severity/deadliness (best measured by CFR - what proportion of sick people die).
- Incidence: New cases.
- Prevalence: Existing cases.
