

PGIMER 2026 B.Sc Nursing

Question Paper (Memory-based) with Solutions

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General Instructions

- (i) PGIMER B.Sc Nursing Question Paper consists of 100 questions.
- (ii) The total marks for the paper is 100.
- (iii) The total test duration is 90 minutes (1 hour 30 minutes).
- (iv) The Question Paper is divided into 5 sections- Aptitude for Nursing, Chemistry, Physics, Biology and English each having 20 questions.
- (v) Each correct answer carries 1 mark and there is negative marking of 0.25 for incorrect answer.

1. Fill in the blank:

Distribute the mangoes _____ 10 boys.

- (A) between
- (B) among
- (C) into
- (D) over

Correct Answer: (B) among

Solution:

Topic Explanation:

Prepositions are functional words that connect nouns, pronouns, or phrases to other words within a sentence.

When expressing distribution, English grammar distinguishes between prepositions based on the number of recipients or entities involved in the action.

Step 1: Understanding the Question:

The task is to choose the correct preposition to complete the sentence where an item (mangoes) is being distributed to a specific group of people (10 boys).

Step 2: Key Formula or Approach:

The standard rule for prepositions of distribution is:

1. Use **between** when referring to two distinct items, entities, or individuals.
2. Use **among** when referring to distribution involving three or more items, entities, or individuals.

Step 3: Detailed Explanation:

- **Usage of 'Between':** Used strictly when distribution or relationship occurs between exactly two parties (e.g., "Distribute the mangoes between the two boys").
- **Usage of 'Among':** Used when distribution occurs within a group consisting of three or more members ($N \geq 3$).
- **Analysis of the Sentence:** The group size given in the problem is 10, which is strictly greater than two ($10 > 2$).
- **Evaluation of Options:**
 - Option (A) 'between' is incorrect because it applies to two people.
 - Option (B) 'among' is correct because 10 represents a group of more than two people.
 - Options (C) 'into' and (D) 'over' do not denote distribution among multiple recipients.

Step 4: Final Answer:

Hence, the correct preposition is 'among', making Option (B) the correct answer.

Quick Tip: Remember the count rule for distribution prepositions:

For 2 entities → Use **between**.

For 3 or more entities → Use **among**.

2. Choose the synonym of "Hopeful".

- (A) Optimistic
- (B) Doubtful
- (C) Hopeless
- (D) Pessimistic

Correct Answer: (A) Optimistic

Solution:

Topic Explanation:

A synonym is a word or phrase that means exactly or nearly the same as another word or phrase in the same language.

Understanding word roots, connotations, and contextual usages is essential for identifying accurate synonyms in vocabulary testing.

Step 1: Understanding the Question:

The objective is to identify the word among the given options that has the closest meaning to the word "Hopeful".

Step 2: Key Formula or Approach:

Analyze the definition and emotional tone (positive, negative, or neutral) of the target word:

Word: **Hopeful** → Feeling or inspiring optimism about a future event (Positive connotation).

Step 3: Detailed Explanation:

- **Definition of 'Hopeful':** Characterized by or expressing a belief that something good

will happen in the future.

- **Option (A) Optimistic:** Means hopeful and confident about the future or the success of something. This directly aligns with the meaning of 'Hopeful'.
- **Option (B) Doubtful:** Means feeling uncertain about something. This is an antonym/opposite of hopeful.
- **Option (C) Hopeless:** Means feeling or causing despair; without hope. This is a direct antonym of hopeful.
- **Option (D) Pessimistic:** Means tending to see the worst aspect of things or believe that the worst will happen. This is also an antonym of hopeful.

Step 4: Final Answer:

Since 'Optimistic' shares the exact positive connotation and definition as 'Hopeful', Option (A) is the correct choice.

Quick Tip: Identify the tone of the given word (Positive/Negative):

"Hopeful" has a positive tone.

Options (B), (C), and (D) all carry negative connotations, while Option (A) carries a positive tone.

3. Which blood group is known as the Universal Donor?

- (A) A negative
- (B) B negative
- (C) O negative
- (D) AB positive

Correct Answer: (C) O negative

Solution:

Topic Explanation:

Blood grouping in humans is determined by the ABO system and the Rh factor system present on the surface of red blood cells (RBCs).

The presence or absence of specific antigens (A, B, and Rh factor) on RBC membranes determines blood compatibility during transfusions.

Step 1: Understanding the Question:

The question asks to identify which specific blood group can be safely donated to individuals of any blood group without causing agglutination or transfusion reactions.

Step 2: Key Formula or Approach:

Universal donor status requires the total absence of surface antigens on red blood cells:

1. ABO System: Blood group O has neither A nor B surface antigens.
2. Rh System: Rh-negative blood lacks the Rh (D) antigen.

Step 3: Detailed Explanation:

- **Surface Antigens:** Antigens A, B, and Rh (D) trigger immune responses in recipients who lack them.
- **Antigen Composition of O negative (O^-):**
 - Lacks Antigen A
 - Lacks Antigen B
 - Lacks Rh (D) Antigen
- **Compatibility Mechanism:** Because O^- RBCs carry no A, B, or Rh antigens on their membranes, the recipient's immune system will not recognize the transfused RBCs as foreign or produce antibodies against them.

- **Contrast with AB positive (AB^+):** AB^+ blood cells contain A, B, and Rh antigens, making AB^+ individuals universal recipients, not donors.

Step 4: Final Answer:

Because O negative (O^-) blood lacks all three primary antigens, it can be transfused into any recipient safely, making Option (C) the correct answer.

Quick Tip: Remember the donor/recipient mnemonic:

O Negative (O^-): Universal Donor (No antigens to trigger immune attacks).

AB Positive (AB^+): Universal Recipient (No antibodies to attack foreign blood).

4. Young's modulus is higher for which of the following?

- (A) Copper
- (B) Steel
- (C) Aluminium
- (D) Brass

Correct Answer: (B) Steel

Solution:

Topic Explanation:

Young's Modulus (Y) is a mechanical property that measures the tensile or compressive stiffness of a solid material when the force is applied lengthways.

It defines the fundamental relationship between stress (force per unit area) and strain (proportional deformation) in the elastic deformation region of a material.

Step 1: Understanding the Question:

We are required to identify which of the given metals/alloys (Copper, Steel, Aluminium, Brass)

possesses the highest value of Young's Modulus, representing the greatest elasticity/stiffness.

Step 2: Key Formula or Approach:

Young's Modulus is defined as:

$$Y = \frac{\text{Tensile Stress}}{\text{Tensile Strain}} = \frac{F/A}{\Delta L/L_0}$$

Where:

F = Applied force

A = Cross-sectional area

ΔL = Change in length

L_0 = Original length

A higher value of Y indicates that a larger force is required to produce a given deformation, meaning the material is more elastic in physical terms (more rigid).

Step 3: Detailed Explanation:

- **Comparison of Approximate Young's Modulus Values:**

- Steel: $Y \approx 200 \times 10^9 \text{ N/m}^2$ (or 200 GPa)
- Copper: $Y \approx 110 \times 10^9 \text{ N/m}^2$ (or 110 GPa)
- Brass: $Y \approx 100 \times 10^9 \text{ N/m}^2$ (or 100 GPa)
- Aluminium: $Y \approx 70 \times 10^9 \text{ N/m}^2$ (or 70 GPa)

- **Physical Significance:** Steel requires much greater stress to produce the same strain compared to copper, brass, or aluminium (200 GPa > 110 GPa > 100 GPa > 70 GPa).

- **Common Misconception:** In physics, steel is considered more elastic than rubber or softer metals because its modulus of elasticity is much higher.

Step 4: Final Answer:

Since Steel has the highest magnitude of Young's modulus among the options ($Y \approx 200 \text{ GPa}$), Option (B) is the correct answer.

Quick Tip: Order of Young's Modulus for common metals:

Steel (200 GPa) > Copper (110 GPa) > Brass (100 GPa) > Aluminium (70 GPa).

Higher Young's modulus means the material resists deformation more strongly.

5. Which step is taken by the nurse during the nursing diagnosis phase?

- (A) Data collection
- (B) Identification of nursing problems
- (C) Implementation of nursing interventions
- (D) Evaluation of patient outcomes

Correct Answer: (B) Identification of nursing problems

Solution:

Topic Explanation:

The Nursing Process is a standardized, systematic, patient-centered scientific method consisting of five distinct phases: Assessment, Diagnosis, Planning, Implementation, and Evaluation (ADPIE).

Step 1: Understanding the Question:

The question asks to identify the specific clinical activity performed during the "Diagnosis" phase of the nursing process.

Step 2: Key Formula or Approach:

Understand the five key stages of ADPIE:

1. **Assessment:** Gathering subjective and objective patient data.
2. **Diagnosis:** Analyzing data to identify actual or potential patient health problems.
3. **Planning:** Setting measurable patient outcomes and nursing actions.
4. **Implementation:** Carrying out the planned interventions.
5. **Evaluation:** Determining if patient goals were met.

Step 3: Detailed Explanation:

- **Option (A) Data collection:** This activity occurs during the initial **Assessment** phase where vital signs, medical history, and physical exams are gathered.
- **Option (B) Identification of nursing problems:** This is the core task of the **Nursing Diagnosis** phase. The nurse synthesizes assessment data to identify specific clinical problems or human responses to health conditions.
- **Option (C) Implementation of nursing interventions:** This takes place during the **Implementation** stage where actual care and treatment protocols are executed.
- **Option (D) Evaluation of patient outcomes:** This occurs during the final **Evaluation** stage to assess the effectiveness of care provided.

Step 4: Final Answer:

Identifying patient problems and clinical health responses is the fundamental focus of the nursing diagnosis phase, making Option (B) the correct answer.

Quick Tip: Remember the ADPIE sequential framework:

Assessment → Data Collection

Diagnosis → Problem Identification

Planning → Goal Setting

Implementation → Care Execution

Evaluation → Outcome Checking

6. All medicines are drugs.

All drugs are chemicals.

Therefore, all medicines are chemicals.

The above statement is:

- (A) True
- (B) False
- (C) Cannot be determined
- (D) None of the above

Correct Answer: (A) True

Solution:

Topic Explanation:

This question is based on categorical syllogism, a form of deductive reasoning where a conclusion is drawn from two given or assumed premises.

In logical deductions, if all elements of Set A belong to Set B, and all elements of Set B belong to Set C, then logically all elements of Set A must belong to Set C.

Step 1: Understanding the Question:

We are given two premises and a proposed conclusion, and we need to verify whether the deduction is logically valid and true.

Step 2: Key Formula or Approach:

Represent the statements using subset notation or Venn Diagrams:

- Premise 1: Medicines $\subseteq$ Drugs
- Premise 2: Drugs $\subseteq$ Chemicals
- Transitive Property of Subsets: If $A \subseteq B$ and $B \subseteq C$, then $A \subseteq C$.

Step 3: Detailed Explanation:

- **Analysis of Premise 1:** "All medicines are drugs." This places the entire set of 'Medicines' completely inside the circle of 'Drugs'.
- **Analysis of Premise 2:** "All drugs are chemicals." This places the entire set of 'Drugs'

completely inside the circle of 'Chemicals'.

- **Deductive Deduction:** Since the entire set of 'Medicines' resides inside 'Drugs', and 'Drugs' is entirely contained inside 'Chemicals', 'Medicines' is fully contained within 'Chemicals'.
- **Evaluating the Conclusion:** "Therefore, all medicines are chemicals." This matches the transitive property ($\text{Medicines} \subseteq \text{Chemicals}$).

Step 4: Final Answer:

The argument follows a valid categorical syllogism of the form Barbara (AAA-1), rendering the conclusion completely true. Hence, Option (A) is correct.

Quick Tip: Use Set Notation for Syllogisms:

If $A \subset B$ and $B \subset C$, then $A \subset C$ is ALWAYS true!

Visualizing concentric circles helps solve syllogisms instantly.

7. Which organelle is known as the "Powerhouse of the Cell"?

- (A) Nucleus
- (B) Golgi apparatus
- (C) Mitochondria
- (D) Ribosome

Correct Answer: (C) Mitochondria

Solution:

Topic Explanation:

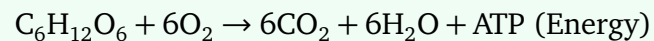
Eukaryotic cells contain specialized membrane-bound structures called organelles, each performing specific metabolic roles essential for cell survival and physiological function.

Step 1: Understanding the Question:

The question asks to identify the cell organelle responsible for energy generation, commonly referred to as the "Powerhouse of the Cell".

Step 2: Key Formula or Approach:

Energy production in biological systems occurs via cellular respiration, where nutrient molecules (glucose) are converted into chemical energy:



The primary site for aerobic respiration and ATP generation is the mitochondria.

Step 3: Detailed Explanation:

- **Mitochondria (Powerhouse):** Double-membrane bound organelle where the Krebs cycle and oxidative phosphorylation occur. They generate most of the cell's supply of adenosine triphosphate (ATP), used as chemical energy.
- **Nucleus (Control Center):** Contains genetic material (DNA) and directs cellular activities like growth, metabolism, and reproduction.
- **Golgi Apparatus (Packaging Unit):** Modifies, sorts, and packages proteins and lipids for secretion or delivery to other organelles.
- **Ribosome (Protein Factory):** Responsible for protein synthesis by translating messenger RNA (mRNA) sequences.

Step 4: Final Answer:

Because mitochondria produce cellular ATP through aerobic respiration, they are universally

termed the "Powerhouse of the Cell". Thus, Option (C) is correct.

Quick Tip: Key Organelle Nicknames to Remember:

Mitochondria: Powerhouse of the Cell (ATP production).

Ribosome: Protein Factory of the Cell.

Lysosome: Suicidal Bags of the Cell.

Nucleus: Brain / Control Center of the Cell.