

CUET PG 2026 B.Ed. Science Question Paper with Solutions(Memory Based)

Time Allowed :1 Hours 30 min	Maximum Marks :300	Total Questions :75
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General Instructions

1. The exam lasts 90 minutes (1 hour 30 minutes).
2. There are 75 Multiple Choice Questions (MCQs) to be answered.
3. +4 marks for every correct answer. -1 mark (negative marking) for every incorrect answer. 0 marks for unanswered or un-attempted questions.
4. For any discrepancy in questions, the English version is considered final (except for language-specific papers).
5. Click one of the four options to choose an answer.
6. You must click "Save & Next" to confirm your response. Only saved answers are considered for evaluation.
7. Use "Mark for Review & Next" to flag a question for later. You can unselect or change your answer using the "Clear Response" button.
8. All calculations must be done on the Rough Sheets provided at the centre. These must be returned to the invigilator after the exam.

1. Which of the following organelles is known as the "powerhouse of the cell"?

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

Correct Answer: (2) Mitochondria

Solution:

Concept:

Cells contain specialized structures called **organelles**, each performing a specific function. The **mitochondria** are responsible for producing energy required for cellular activities.

Mitochondria generate energy in the form of **ATP (Adenosine Triphosphate)** through the process of **cellular respiration**. Because they supply energy to the cell, they are commonly referred to as the "**powerhouse of the cell**".

Step 1: Understanding the role of mitochondria.

Mitochondria break down glucose and other nutrients in the presence of oxygen to produce ATP, which powers metabolic activities such as movement, synthesis of molecules, and active transport.

Step 2: Eliminating other options.

- **Nucleus** controls genetic information and cell activities.
- **Ribosomes** are responsible for protein synthesis.
- **Golgi apparatus** modifies and packages proteins for transport.

Thus, the organelle known as the **powerhouse of the cell** is **mitochondria**.

Quick Tip

Mitochondria produce ATP through cellular respiration, which is why they are called the **powerhouse of the cell**.

2. What is the unit of measure for electrical resistance?

- (A) Volt
- (B) Ampere
- (C) Ohm
- (D) Watt

Correct Answer: (3) Ohm

Solution:

Concept:

Electrical resistance is the property of a material that opposes the flow of electric current through it. The SI unit of electrical resistance is the **Ohm**, represented by the symbol Ω .

Resistance is related to voltage and current through **Ohm's Law**:

$$V = IR$$

where:

- V = Voltage (Volts)
- I = Current (Amperes)
- R = Resistance (Ohms)

Step 1: Identify the SI unit for resistance.

The standard SI unit used to measure resistance is the **Ohm** (Ω).

Step 2: Eliminate other options.

- **Volt** measures electrical potential difference.
- **Ampere** measures electric current.
- **Watt** measures electrical power.

Therefore, the correct unit for electrical resistance is the **Ohm**.

Quick Tip

Ohm (Ω) is the SI unit of electrical resistance, defined using Ohm's Law $V = IR$.

3. Which gas is primarily responsible for the greenhouse effect on Earth?

- (A) Oxygen
- (B) Nitrogen
- (C) Carbon dioxide
- (D) Hydrogen

Correct Answer: (3) Carbon dioxide

Solution:

Concept:

The **greenhouse effect** is a natural process in which certain gases in the Earth's atmosphere trap heat and keep the planet warm enough to sustain life. These gases are known as **greenhouse gases**.

Major greenhouse gases include:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Water vapor

Among these, **carbon dioxide** is the most significant contributor to the greenhouse effect due to its large quantity in the atmosphere and its release from human activities such as burning fossil fuels and deforestation.

Step 1: Identify the main greenhouse gas.

Carbon dioxide absorbs infrared radiation emitted by the Earth and traps heat within the atmosphere.

Step 2: Eliminate other options.

- **Oxygen** and **Nitrogen** make up most of the atmosphere but do not significantly trap heat.
- **Hydrogen** is not a greenhouse gas in Earth's atmosphere.

Thus, the gas primarily responsible for the greenhouse effect is **Carbon dioxide**.

Quick Tip

Carbon dioxide (CO_2) is the major greenhouse gas responsible for global warming due to fossil fuel burning and deforestation.

4. In a plant cell, which structure provides rigidity and protection?

- (A) Cell membrane
- (B) Cell wall
- (C) Vacuole
- (D) Nucleus

Correct Answer: (2) Cell wall

Solution:

Concept:

Plant cells contain a rigid outer layer called the **cell wall**. It surrounds the cell membrane and provides structural support, protection, and shape to the cell.

The cell wall is primarily composed of **cellulose**, a complex carbohydrate that gives the cell strength and rigidity.

Step 1: Understanding the function of the cell wall.

The cell wall helps the plant cell maintain its shape and protects it from mechanical damage and excessive water intake.

Step 2: Eliminating other options.

- **Cell membrane** controls the movement of substances in and out of the cell.
- **Vacuole** stores water and nutrients.
- **Nucleus** controls genetic activities of the cell.

Thus, the structure responsible for rigidity and protection in plant cells is the **cell wall**.

Quick Tip

Plant cells have a cell wall made of cellulose which provides rigidity, support, and protection.

5. What is the chemical formula for common table salt?

- (A) KCl
- (B) NaCl
- (C) CaCl₂
- (D) Na₂SO₄

Correct Answer: (2) NaCl

Solution:

Concept:

Table salt, commonly used in food, is chemically known as **sodium chloride**. It is an ionic compound formed by the combination of sodium (Na) and chlorine (Cl).

In sodium chloride, sodium loses one electron to form a positive ion (Na^+), and chlorine gains one electron to form a negative ion (Cl^-). These oppositely charged ions attract each other to form an ionic bond.

Step 1: Identify the chemical composition.

Table salt consists of **sodium** and **chlorine**, forming the compound **NaCl**.

Step 2: Eliminate other options.

- **KCl** is potassium chloride.
- **CaCl₂** is calcium chloride.
- **Na₂SO₄** is sodium sulfate.

Thus, the chemical formula for common table salt is **NaCl**.

Quick Tip

NaCl = Sodium chloride = Table salt. It is formed by ionic bonding between sodium and chlorine.

6. Which law of motion states that for every action, there is an equal and opposite reaction?

- (A) Newton's First Law
- (B) Newton's Second Law
- (C) Newton's Third Law
- (D) Law of Gravitation

Correct Answer: (3) Newton's Third Law

Solution:

Concept:

Newton's Third Law of Motion states that:

For every action, there is an equal and opposite reaction.

This means that whenever one object exerts a force on another object, the second object exerts an equal force in the opposite direction on the first object.

Step 1: Understanding the action–reaction principle.

If object A applies a force on object B, then object B simultaneously applies an equal force on object A in the opposite direction.

Step 2: Examples of Newton's Third Law.

- A rocket moves upward because gases push downward.

- When walking, the foot pushes the ground backward and the ground pushes the body forward.

Step 3: Eliminating other options.

- **Newton's First Law** explains inertia.
- **Newton's Second Law** relates force, mass, and acceleration.
- **Law of Gravitation** explains gravitational attraction between masses.

Thus, the law stating that every action has an equal and opposite reaction is **Newton's Third Law of Motion**.

Quick Tip

Newton's Third Law: Action = Reaction. Forces always occur in pairs acting in opposite directions.

7. Which part of the human brain is responsible for maintaining balance and posture?

- (A) Cerebrum
- (B) Cerebellum
- (C) Medulla oblongata
- (D) Hypothalamus

Correct Answer: (2) Cerebellum

Solution:

Concept:

The human brain is divided into several major parts, each responsible for specific functions. The **cerebellum** is located at the back of the brain, below the cerebrum, and plays a crucial role in coordinating voluntary movements.

The cerebellum helps in maintaining:

- Body balance
- Posture
- Coordination of muscles

Step 1: Identify the brain part controlling balance.

The cerebellum integrates sensory information from the inner ear, eyes, and muscles to maintain equilibrium and posture.

Step 2: Eliminate other options.

- **Cerebrum** controls thinking, memory, and voluntary actions.

- **Medulla oblongata** regulates involuntary actions such as breathing and heartbeat.
- **Hypothalamus** regulates body temperature, hunger, and hormones.

Thus, the brain part responsible for balance and posture is the **cerebellum**.

Quick Tip

Cerebellum = balance + posture + coordination of movement.

8. What process do plants use to convert light energy into chemical energy?

- (A) Respiration
- (B) Transpiration
- (C) Photosynthesis
- (D) Fermentation

Correct Answer: (3) Photosynthesis

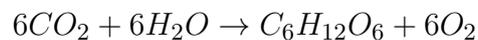
Solution:

Concept:

Photosynthesis is the process by which green plants convert **light energy** from the sun into **chemical energy** stored in glucose.

This process takes place in the **chloroplasts** of plant cells using the pigment **chlorophyll**.

The simplified photosynthesis equation is:



Step 1: Understand the energy conversion.

During photosynthesis, plants use sunlight to convert carbon dioxide and water into glucose and oxygen.

Step 2: Eliminate other options.

- **Respiration** releases energy from food.
- **Transpiration** is the loss of water vapor from plant leaves.
- **Fermentation** occurs in microorganisms under anaerobic conditions.

Thus, the process converting light energy into chemical energy is **photosynthesis**.

Quick Tip

Photosynthesis = Sunlight + CO₂ + Water → Glucose + Oxygen.

9. In a chemical reaction, what is the name of the substance that speeds up the reaction without being consumed?

- (A) Reactant
- (B) Product
- (C) Catalyst
- (D) Solvent

Correct Answer: (3) Catalyst

Solution:

Concept:

A **catalyst** is a substance that increases the rate of a chemical reaction without being permanently consumed or undergoing any permanent chemical change.

Catalysts work by lowering the **activation energy** required for a reaction to occur.

Step 1: Understand the function of a catalyst.

By reducing the activation energy barrier, a catalyst allows more molecules to react successfully, thereby speeding up the reaction.

Step 2: Eliminate other options.

- **Reactants** are substances that take part in a reaction.
- **Products** are substances formed after the reaction.
- **Solvent** dissolves substances but does not necessarily speed up reactions.

Thus, the substance that speeds up a reaction without being consumed is a **catalyst**.

Quick Tip

Catalyst = speeds up reaction + not consumed.

10. Which planet in our solar system is known as the "Red Planet"?

- (A) Venus
- (B) Mars
- (C) Jupiter
- (D) Saturn

Correct Answer: (2) Mars

Solution:

Concept:

Mars is commonly known as the "**Red Planet**" because of its reddish appearance when observed from Earth. The red color is caused by the presence of **iron oxide (rust)** on the planet's surface.

Iron minerals in Martian soil react with oxygen and form iron oxide, giving the planet its distinctive red color.

Step 1: Identify the planet with reddish appearance.

Mars appears red due to iron oxide dust covering much of its surface.

Step 2: Eliminate other options.

- **Venus** is known for its thick atmosphere and extreme temperature.
- **Jupiter** is the largest planet with prominent gas bands.
- **Saturn** is known for its extensive ring system.

Thus, the planet known as the **Red Planet** is **Mars**.

Quick Tip

Mars = Red Planet because its surface contains iron oxide (rust).

11. What is the pH value of pure water at room temperature?

- (A) 5
- (B) 7
- (C) 9
- (D) 14

Correct Answer: (2) 7

Solution:

Concept:

The **pH scale** measures the acidity or basicity of a solution and ranges from **0 to 14**.

- $\text{pH} < 7 \rightarrow$ Acidic
- $\text{pH} = 7 \rightarrow$ Neutral
- $\text{pH} > 7 \rightarrow$ Basic (alkaline)

Pure water at room temperature ($\approx 25^\circ\text{C}$) has equal concentrations of hydrogen ions (H^+) and hydroxide ions (OH^-), making it **neutral**.

Step 1: Understand neutrality of pure water.

In pure water:

$$[\text{H}^+] = [\text{OH}^-]$$

This balance results in a neutral pH.

Step 2: Determine the neutral value on the pH scale.

The neutral point on the pH scale is **7**. Therefore, pure water has a pH of **7**.

Quick Tip

pH 7 = Neutral. Pure water at room temperature has a pH of **7**.

12. Which blood cells are responsible for carrying oxygen throughout the body?

- (A) White blood cells
- (B) Platelets
- (C) Red blood cells
- (D) Plasma cells

Correct Answer: (3) Red blood cells

Solution:

Concept:

Red blood cells (RBCs), also called **erythrocytes**, are responsible for transporting oxygen from the lungs to the tissues throughout the body.

RBCs contain a protein called **hemoglobin**, which binds with oxygen molecules and carries them through the bloodstream.

Step 1: Understand the oxygen transport mechanism.

Hemoglobin in red blood cells combines with oxygen in the lungs and delivers it to body tissues where it is required for cellular respiration.

Step 2: Eliminate other options.

- **White blood cells** help fight infections.
- **Platelets** are involved in blood clotting.
- **Plasma** is the liquid component of blood.

Thus, the blood cells responsible for transporting oxygen are **red blood cells**.

Quick Tip

Red Blood Cells (RBCs) contain hemoglobin, which carries oxygen throughout the body.

13. What type of lens is used to correct myopia (nearsightedness)?

- (A) Convex lens
- (B) Concave lens
- (C) Cylindrical lens
- (D) Bifocal lens

Correct Answer: (2) Concave lens

Solution:

Concept:

Myopia (nearsightedness) is a vision defect in which a person can see nearby objects clearly but distant objects appear blurred. This occurs when the image of distant objects forms **in front of the retina** instead of on the retina.

A **concave lens** (diverging lens) is used to correct this defect.

Step 1: Understanding how the concave lens corrects vision.

A concave lens diverges incoming light rays so that they appear to come from a point farther away. This adjustment allows the image to form correctly on the retina.

Step 2: Eliminating other options.

- **Convex lens** is used to correct hypermetropia (farsightedness).
- **Cylindrical lens** is used for astigmatism.
- **Bifocal lenses** correct both near and distant vision problems.

Thus, myopia is corrected using a **concave lens**.

Quick Tip

Myopia → Concave lens Hypermetropia → Convex lens.

14. Which element has the highest thermal conductivity of all metals?

- (A) Copper
- (B) Aluminum
- (C) Silver
- (D) Gold

Correct Answer: (3) Silver

Solution:

Concept:

Thermal conductivity is the ability of a material to conduct heat. Among all metals, **silver (Ag)** has the highest thermal conductivity.

Silver allows heat to flow through it very efficiently due to the movement of free electrons within its structure.

Step 1: Identify the metal with the highest thermal conductivity.

Silver is the best conductor of heat among metals.

Step 2: Compare with other metals.

- **Copper** also has very high thermal conductivity but slightly lower than silver.
- **Aluminum** conducts heat well but less efficiently than copper.
- **Gold** has good conductivity but is less than silver and copper.

Thus, the element with the highest thermal conductivity is **Silver**.

Quick Tip

Order of thermal conductivity (high to low): Silver \succ Copper \succ Gold \succ Aluminum.

15. What is the process of a solid turning directly into a gas called?

- (A) Condensation
- (B) Sublimation
- (C) Evaporation
- (D) Deposition

Correct Answer: (2) Sublimation

Solution:

Concept:

Sublimation is the process in which a substance changes directly from a **solid state to a gaseous state** without passing through the liquid phase.

This occurs when molecules of a solid gain enough energy to escape directly into the gas phase.

Common examples include:

- Dry ice (solid CO_2)
- Camphor
- Naphthalene
- Iodine crystals

Step 1: Identify the phase change.

Solid \rightarrow Gas without becoming liquid is called **sublimation**.

Step 2: Eliminate other options.

- **Condensation** is gas \rightarrow liquid.
- **Evaporation** is liquid \rightarrow gas.
- **Deposition** is gas \rightarrow solid.

Thus, the direct change of a solid into gas is called **sublimation**.

Quick Tip

Sublimation = Solid → Gas directly (no liquid stage).
