SUMMATIVE ASSESSMENT II | 2025-2026

BASIC SCIENCE MODEL QUESTION PAPER

Class: 6

Time: 2 Hrs 15 minutes

Instructions

1. 15 minutes cool-off time is allotted for reading and understanding the activities.

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1. a) "Pure Coconut Oil" is often seen written on packets sold in the market. Scientifically, is coconut oil a **pure substance**? Justify your answer by explaining the arrangement of molecules in it compared to a scientifically pure substance like water.

b) Classify the following changes/processes into the correct columns: *Salt dissolving in water, Tea dust settling in tea, Iron powder mixed with sand, Carbon dioxide dissolved in soda water.*

Homogeneous Mixture	Heterogeneous Mixture
.....	.....
.....	.....

c) Identify the odd one out based on the state of the solution's components:
A. Soda water B. Vinegar C. Brass D. Salt solution

(Hint: Think about the state of the solute and solvent)

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2. Question 2 has two parts 2(A) and 2(B). Write any one 2(A) or 2(B) completely.

2. (A)

a) Observe the statement: *"Nature itself prevents self-pollination and encourages cross-pollination to produce better varieties of plants."* Explain **two** distinct methods or adaptations found in flowers (like Sunflower or Gloriosa) that prevent self-pollination.

b) Differentiate between **Pollination** and **Fertilisation**.

OR

2. (B) a) You are provided with a flower of **Pumpkin** and a flower of **Lady's Finger**. If you observe them closely, which one is a "Complete Flower"? Give a reason for your choice based on the four main parts of a flower.

b) Complete the following relationship based on fruit formation:

- **Mango** : Simple Fruit (formed from single ovary)
- **Jackfruit** : ..... (formed from .....)

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3. a) A student observed a slide of a cell under a microscope and noted the following parts: *Cell membrane, Cytoplasm, Nucleus, Mitochondrion.* However, the student could **not** see a Cell Wall or Chloroplast.

Identify the type of cell observed. Why is the Cell Wall absent in this type of cell?

b) Match the cell organelles in **Column A** with their specific functions in **Column B**.

Column A	Column B
1. Ribosome	a. Controls cellular activities
2. Vacuole	b. Synthesises protein
3. Nucleus	c. Synthesises energy
4. Mitochondrion	d. Stores water and excretory products

c) Who coined the term "cell"? What observation led him to choose this name?

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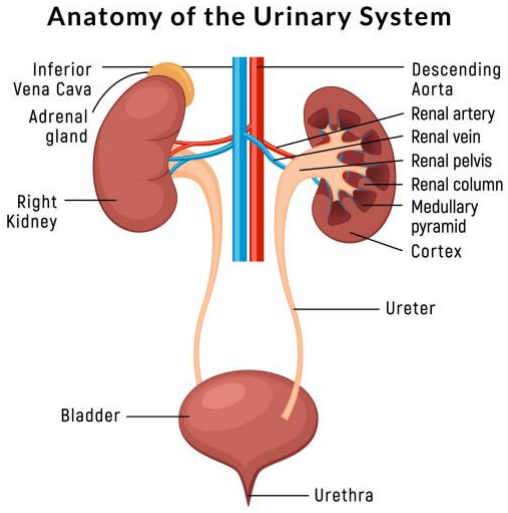
4. a) Analyze the diagram of the **filtration process** in the human body.



Kidneys act as filters to separate waste from blood. If the kidneys fail, what is the artificial method used to filter blood called? How is this method similar to the separation of mixtures we study in science?

b) You have a mixture of **husk (chaff)**, **stones**, and **paddy**. Propose a sequence of two separation methods to obtain clean paddy. Explain why you chose these specific methods based on the properties of the components.

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5. a) Examine the following statements about **Pseudo Fruits**.
Statement 1: In all fruits, the ovary acts as the edible part.
Statement 2: In Apple and Cashew, parts other than the ovary become the fruit.

Which of the above statements is correct? Explain why Cashew Apple is called a pseudo fruit.

b) Observe the relation between the number of ovaries and the fruit type:

- **Bitter Gourd Flower**: One ovary → One fruit.
- **Custard Apple Flower**: More than one ovary → Aggregate fruit.
  Based on this, explain what an **Aggregate Fruit** is.

c) Which gas constitutes the largest percentage (78%) of the mixture we call "Air"?

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6. Question 6 has two parts 6(A) and 6(B). Write any one 6(A) or 6(B) completely.

6. (A) a) A sugar solution is prepared by dissolving sugar in water. After stirring, the sugar is no longer visible. Based on the concept of molecules, explain where the sugar went. Is the sweetness the same in all parts of the solution? Why?

b) Distinguish between **Monoecious** and **Dioecious** plants with one example for each.

c) Identify the "Powerhouse of the cell" from the following options: A. Endoplasmic reticulum B. Mitochondrion C. Nucleus D. Vacuole

OR

6. (B) a) Observe the hierarchy of life organization below: **Cell → Tissue → Organ → Organ System → Organism** Define what a "Tissue" is. Name one example of a tissue found in animals and one in plants (from the context of skin or protection).

b) "A molecule is the smallest particle of a substance having all its properties." If you crush a sugar crystal into the smallest possible powder, will it still retain the sweetness of sugar? Explain using the concept of molecules.

c) Which part of the plant cell provides protection and is found outside the cell membrane?