

MODEL SUMMATIVE ASSESSMENT - TERM II 2025-26

BIOLOGY

Class: X

Time: 1½ Hours

Total Score: 40

Answer questions 1 to 4. (Each carries 1 score)

(4 × 1 = 4)

1. Identify the sensory receptors responsible for detecting pain and temperature changes.

- a) Meissner corpuscles
 - b) Pacinian corpuscles
 - c) Independent nerve endings
 - d) Krause end bulbs
-

2. Which hormone maintains water balance by reducing urine production?

- a) Thyroxine
 - b) Progesterone
 - c) Vasopressin (ADH)
 - d) Melatonin
-

3. Match Column I with Column II:

A – Plant Hormone | B – Function

- | | |
|--------------|----------------------------|
| 1. Auxin | i. Delays ageing of leaves |
| 2. Cytokinin | ii. Cell elongation |
| 3. Ethylene | iii. Fruit ripening |

Choose the correct option:

- a) 1-ii, 2-i, 3-iii
 - b) 1-iii, 2-ii, 3-i
 - c) 1-i, 2-iii, 3-ii
 - d) 1-ii, 2-iii, 3-i
-

4. Which gland is known as the biological clock?

- a) Thymus
- b) Pineal gland

- c) Parathyroid
- d) Hypothalamus

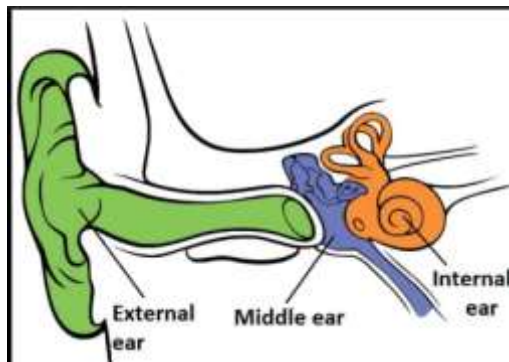
Answer questions 5 to 11. (Each carries 2 scores)

(7 × 2 = 14)

5A. Electrical impulses are essential for communication between different parts of the body.

- a) What is a receptor? (1)
- b) Explain how a receptor initiates an impulse when a stimulus is received. (1)OR

5B. The diagram of the ear is given.



- a) Identify the cochlea.
 - b) Explain its role in hearing.
-

6.

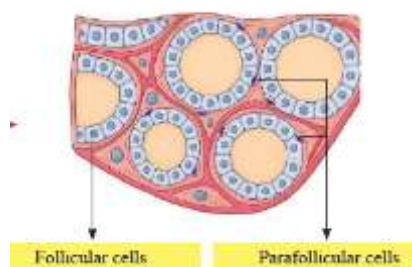
- a) What is photoperiodism?
 - b) How does phytochrome help in flowering?
-

7. Analyse the flowchart:

Glucose ↑ → Insulin ↑ → _____ → Glucose ↓

- a) Fill in the blank.
 - b) Explain the role of insulin in maintaining glucose homeostasis.
-

8. Observe the structure of the thyroid gland.



- a) Name the hormone produced by follicular cells.
- b) Write any one function of this hormone.

9. Analyse the situation:

A child shows excessive thirst, frequent urination and fatigue.

- a) Identify the condition.
- b) Write the role of glucagon in glucose regulation.

10A. Read the statements:

- (i) Auxins accumulate on the shaded side of a plant stem.
- (ii) Cells elongate more on the shaded side.
- a) Name the phenomenon.
- b) Explain how auxin causes bending.

OR

10B. A student says: "Colour vision is possible because of photopsin pigments."

- a) Name the cells containing photopsin.
- b) Explain how colour vision occurs.

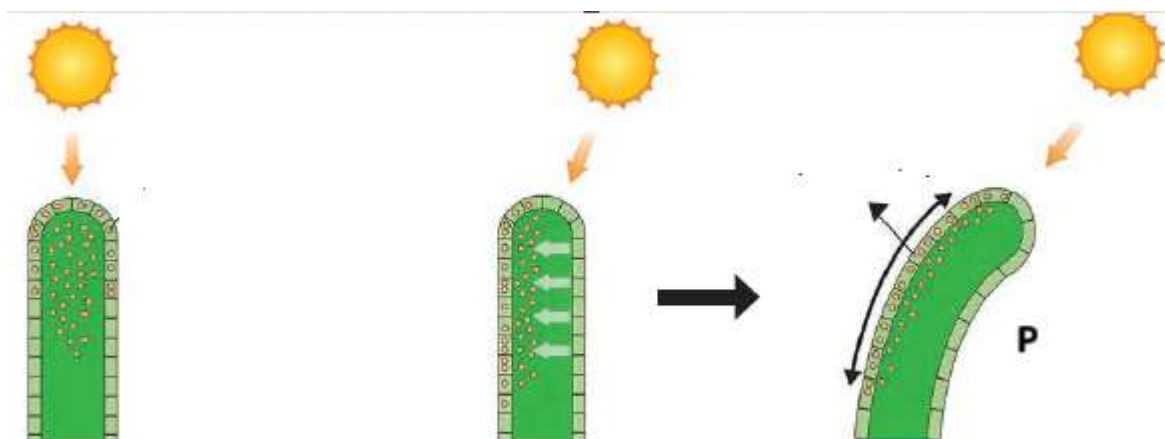
11. Pineal gland secretes melatonin.

- a) When is melatonin production maximum?
- b) Explain how mobile phone use at night affects sleep.

Answer questions 12 to 17. (Each carries 3 scores)

(6 × 3 = 18)

12. Observe the diagram of Auxin action.



- Identify P (side of stem showing more elongation).
- Explain the mechanism that causes bending.
- Write one agricultural use of synthetic auxins.

13A. Draw the diagram of the human ear

Label:

- Tympanum
- Organ of Corti
- Eustachian tube

Write their functions.

OR

13B. The inner ear helps in maintaining balance.

- Name the structure responsible for balance.
- Explain how head movement stimulates hair cells.
- Why does dizziness occur after spinning?

14. Analyse the events in the endocrine pathway:

Hypothalamus → Releasing hormone → Pituitary → Tropic hormone

- Write any two functions of oxytocin.
- What is the role of hypothalamus in hormone regulation?
- Name one hormone produced by the anterior pituitary.

15. Observe the diagram of calcium regulation.

- Name the glands that secrete calcitonin and parathormone.
- Explain how they maintain normal calcium levels.
- Mention one symptom of hyperthyroidism.

16A. Analyse the following situations:

- A gardener sprays synthetic cytokinin on plants.
 - Fruits ripen uniformly after using ethylene.
- a) State the effect of cytokinins.
 - b) How does ethylene induce ripening?
 - c) Give one advantage of synthetic plant hormones.

OR

16B. A boy suddenly touches a hot vessel and withdraws his hand.

- a) Identify the receptors involved.
 - b) Explain the pathway of impulse to the brain.
 - c) Why is this action important for survival?
-

17. The endocrine system shows hormonal imbalance.

- a) What happens when ADH secretion decreases?
 - b) Why does dwarfism occur?
 - c) Write one function of testosterone.
-

Answer question 18. (Carries 4 scores)

(1 × 4 = 4)

18A. Observe the pathway of hearing.

Pinna → Tympanum → Ossicles → Oval window → Cochlea → Auditory nerve

- a) Complete the flowchart with missing parts.
- b) Explain how vibrations generate nerve impulses in the cochlea.
- c) What is the function of the Eustachian tube?

OR

18B. Study the hormonal feeding scenario:

Hunger ↑ → Ghrelin ↑ → _____ → Appetite ↑
Fullness ↑ → Leptin ↑ → _____ → Appetite ↓

- a) Fill in the blanks.
- b) Explain the role of ghrelin and leptin in appetite regulation.
- c) Why is leptin deficiency linked to obesity?