SECOND TERM SUMMATIVE ASSESSMENT 2026-27

ANSWER KEY / SCORING INDICATORS

BIOLOGY

Std: X SET 2 **Score: 40**

For teachers **Time: 1½ Hours**

Note to the teacher: Accept any correct alternative answer. Give the split scores shown in brackets.

Questions 1 to 4 **(1 score each)**

1. B. Schwann cells (1)

2. A. Both A and R are correct and R is the correct explanation of A. (1)

3. B. (i) and (iii) (1)

4. A. a-(iii), b-(i), c-(ii) (1)

Questions 5 to 11 **(2 scores each)**

5. Any two: organisms produce more offspring than can survive; there is a struggle for existence; variations exist among individuals; the fittest survive (natural selection); favourable variations are passed on and lead to new species over time. (2)

6. a) Dendrites (dendron) (1)

b) Dendrite → cyton (cell body) → axon → axon terminal (synaptic knob) (1)

7. (A) Any two: controls involuntary actions such as heartbeat, breathing and blood pressure; controls reflexes like coughing, sneezing and vomiting. (2)

(B) Any two: maintains body temperature; controls hunger, thirst and sleep; maintains homeostasis; controls the pituitary through releasing hormones; links the nervous and endocrine systems. (2)

8. a) In the upper part of the nasal cavity (olfactory epithelium) (1)

b) The smell molecules dissolve in the mucus and stimulate the olfactory receptors; impulses travel through the olfactory nerve to the brain. (1)

9. a) Any two: touch, pressure, heat, cold, pain (1)

b) Receptors are more densely packed in the fingertips. (1)

10. a) Thyroxine (T4/T3) (1)

b) It lowers the calcium level in blood by helping to deposit calcium in the bones. (1)

11. (A) a) Auxin (1)

b) Auxin moves to the shaded side, where it makes the cells grow (elongate) faster, so the shoot bends towards the light. (1)

(B) Any two: ripens fruits; causes falling of leaves and fruits; promotes ageing; breaks dormancy of some seeds/buds. (2)

Questions 12 to 17 **(3 scores each)**

12. (A) a) Deficiency of vitamin A, which is needed to form rhodopsin in the rod cells. (1)

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b) Colour blindness – a genetic defect in which some cones (red or green) do not function properly. (1)

c) The lens becomes opaque (cloudy), so the vision becomes blurred. (1)

(B) Pinna → auditory canal → eardrum (tympanum) → ear ossicles → oval window → cochlear fluid → hair cells of the Organ of Corti → auditory nerve → hearing area of the cerebrum (3)

13. a) Dilates (1)

b) Increases saliva (1)

c) Slows down (1)

14. a) The pancreas does not produce enough insulin, or the cells do not respond to insulin. (1)

b) The blood glucose level becomes very high; the kidneys cannot reabsorb all of it, so glucose is passed out in urine. (1)

c) Any two: regular exercise; balanced diet with less sugar and fat; avoiding junk food; maintaining healthy body weight. (1)

15. a) Any one: helps the body cope with stress; increases blood glucose; reduces inflammation (anti-inflammatory). (1)

b) It helps the kidneys to reabsorb sodium (and water), maintaining the salt–water balance. (1)

c) Adrenal medulla (1)

16. a) It promotes the growth of the body (bones and muscles). (1)

b) It stimulates the thyroid gland to secrete thyroxine. (1)

c) Prolactin (1)

17. (A) a) Cerebrum – centre of thinking, intelligence, memory, imagination and voluntary actions; receives sensations. (1)

b) Cerebellum – coordinates muscular activities and maintains balance. (1)

c) Thalamus – relay centre for impulses to and from the cerebrum (analyses impulses). (1)

(B) a) Formation of mRNA from DNA in the nucleus. (1)

b) It brings specific amino acids to the ribosome. (1)

c) In the ribosomes (in the cytoplasm) (1)

Question 18 **(4 scores)**

18. (A) a) Rhodopsin (1)

b) S, M and L cones (sensitive to blue, green and red light) (1)

c) Yellow spot has the maximum number of photoreceptors (clearest vision); blind spot has no photoreceptors (no vision). (1)

d) Through the optic nerve to the visual area of the cerebrum (via bipolar and ganglion cells). (1)

(B) a) Ecdysone (moulting hormone) (1)

b) It prevents the larva from becoming an adult until it is fully grown (keeps larval characters). (1)

c) Chemicals released by an animal that cause a response in other members of the same species. (1)

d) Any one: ants laying trails; queen bee controlling the hive; female moths attracting males. (1)

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