A

Samagra Shiksha Kerala
Summative Assessment - II 2025-26

E-1006-BIO

Class : X

Biology

Time : 1½ Hours
Score : 40

Instructions

1. First 15 minutes is given as cool off time. You may use this time to read the questions and plan your answers.
2. Read the questions carefully and answer the questions.
3. Keep in mind the score and time while answering the questions.
4. Choices are given for questions 9, 11, 12, 14 and 18.

Answer questions from 1 to 4. Each carries 1 Score. **(4X1=4)**

1. Which of the following is not a component of the nucleotide of DNA molecule? (1)

   a) Ribose sugar b) Phosphate group c) Deoxyribose sugar d) Nitrogen base

2. Analyse the following statement and reason, and choose the correct answer from the options given below

   Statement (A) : Prolactin helps in the secretion of milk after childbirth.

   Reason (R) : It is secreted by the pituitary gland after delivery. (1)

   a) Both A and R are correct, and R explains A

   b) Both A and R are correct, but R does not explain A

   c) A correct, but R incorrect

   d) A incorrect, but R correct

3. Which statement correctly describes the function of auxin? (1)

   a) Stimulates leaf fall b) Promotes elongation of cells in shoots

   c) Maintains seed dormancy d) Promotes fruit ripening

4. A teacher asks students to identify a preventable eye disease caused by nutritional deficiency. Which one should they choose? (1)

   a) Glaucoma b) Cataract c) Xerophthalmia d) Short sightedness

Answer questions from 5 to 11. Each carries 2 Score. **(7X2=14)**

5. A patient feels very thirsty, hungry, urinates frequently, and often feels tired.

   a) Identify the gland and the hormone related to this condition (1)

   b) What will happen if the patient ignores this condition? (1)

6. *Modern medicine makes use of biological concepts such as evolution and genetics to treat diseases more effectively.*

Write suitable examples for this statement related to evolutionary clinical medicine and personalised medicine. (2)

7. A man standing on the seashore suddenly notices a child being pulled away by strong waves. Without thinking twice, he jumps into the water to save the child.

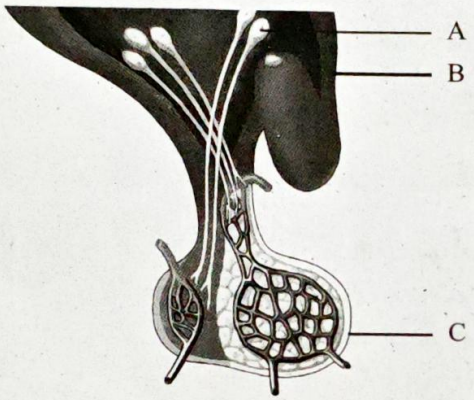
a) Which hormone becomes active in this emergency situation? (1)

b) Explain how this hormone helps him to act quickly and face the situation effectively. (1)

8. A person lost both sensation and movement of the leg after an injury. The doctor found that a mixed nerve was damaged.

Why did the damage to a single mixed nerve cause both loss of sensation and movement? (2)

9. A. Observe the illustration and answer the questions.



a) Identify the parts labelled as 'A' and 'B'. (1)

b) How does the gland labelled as 'B' influence the part labelled as 'C'? (1)

OR

B. Phytochrome is a light-sensitive pigment found in plants.

a) Where is this pigment synthesized? (1)

b) What is the significance of this pigment in plants? (1)

10. Your class conducts an exhibition on the topic "***Know Your Hormones***" to create awareness on endocrine gland disorders.

a) Explain how organizing such exhibitions helps students to develop compassion and social responsibility. (1)

b) Suggest any two meaningful activities to promote empathy and awareness about people with hormonal imbalances. (1)

11. A. Analyse the statement and answer the following questions.

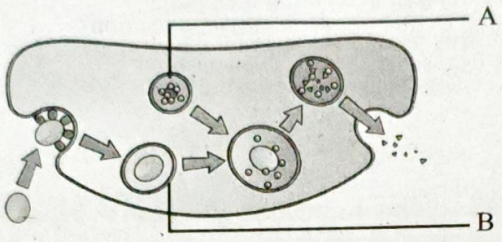
Persistent cough, chest pain, and weight loss are the symptoms of the disease.

a) Identify the disease and its pathogen. (1)

b) Describe the prevention and treatment method used for this disease. (1)

OR

B. Analyse the illustration and answer the following questions.

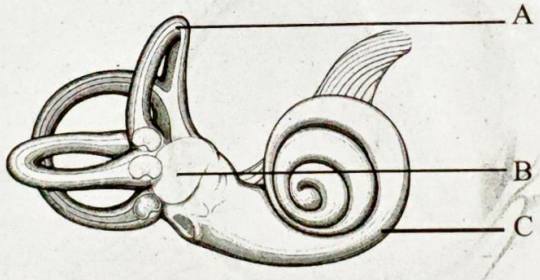


a) Identify the process illustrated. (1)

b) What is the role of 'A' and 'B' in this process. (1)

Answer questions from 12 to 17. Each carries 3 Score. **(6X3=18)**

12. A. Observe the given diagram of the inner ear and answer the following questions.



a) Due to defects of which parts labelled 'A', 'B' and 'C' does a person's body balance get lost? (1)

b) How do these parts help in maintaining the body balance? (2)

OR

B. Fluid movements inside the inner ear helps in sound perception.

a) Mention the fluids present in inner ear. (1)

b) Explain how vibration of these fluids leads to the generation of nerve impulses related to hearing. (2)

13. A scientist observes two distinct processes in the cell. In the first process, enzymes help to create a message molecule from DNA. In the second process, this message molecule reaches the ribosome and a product is formed.

a) Name the processes. (1)

b) What is the significance of message molecule in the second process? (1)

c) Explain various steps in the second process. (1)

14. A. Answer the following questions related to olfaction in humans.

a) Which nerve carries the impulses of smell to the brain? (1)

b) What is the role of the mucus membrane in smell perception? (1)

c) How do the olfactory receptors help in recognising smell? (1)

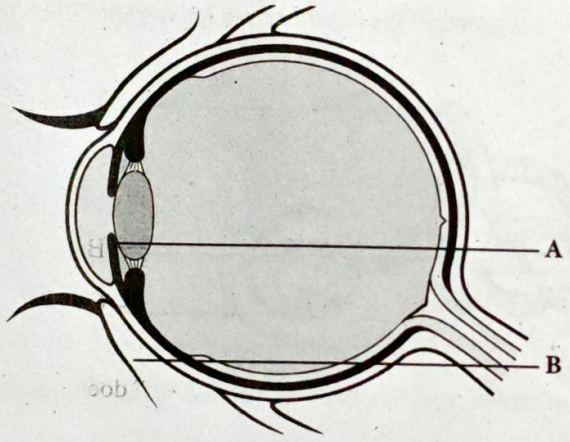
OR

B. Write a Scientific explanation for the statement given below, based on the structure and function of taste buds and chemoreceptors. (3)

Saliva is often called the "medium of taste."

(Hints: Saliva, chemoreceptors, impulses, taste)

15. Observe the diagram and answer the following questions.



a) Redraw the diagram. (1)

b) Identify and label the parts 'A' and 'B' using the following hints. (1)

- A - Part that control the size of the pupil.
- B - The muscle that changes the shape of the lens.

c) If the muscles in A fail to function, what will happen to pupil in bright light? (1)

16. Observe the picture and answer the following questions.

a) Identify the gland in the picture. (1)

b) Write the names of the two types of hormone-producing cells in this gland. (1)

c) Write any two other functions of the hormone that controls metabolism and body temperature. (1)

17. Observe the diagram of four types of white blood cells. Identify them and complete the table. (3)

A B C D

	A	B	C	D
Name of cell	(i)	(ii)	(iii)	(iv) .....
Function	Destroy parasites	Produce chemicals against pathogens	(v)	(vi) .....

Answer question 18. It carries 4 score. **(4X1=4)**

18. A. While reading a book at night, a person faces a sudden electricity failure. For a little while, he couldn't see anything.

a) During darkness, what happens to the production of glutamate in photoreceptors? (1)

b) How do the successive reactions in ON bipolar and OFF bipolar cells help in creating a sense of darkness in the brain? (2)

c) What is the role of ganglion cells in impulse transmission ? (1)

OR

B. A student observes colourful lights on the stage during a school function. He can easily identify each colour separately.

a) Which cells in the retina help in detecting different colours and what is the pigment present in them? (1)

b) Explain how different types of these cells help in identifying various colours. (3)