

Summative Assessment - III 2025 - 2026
(Model Question Paper)
Biology

Time : 1 ½ Hours

Class : X

Score : 40

Instructions

- The first 15 minutes are cool-off time.
- This time can be used for reading the questions and planning the answers
- Write answers only according to the instructions and questions.
- While writing the answers, consider the score and time.
- Question numbers 5, 10, 13, 16 and 18 are given choices.

Answer questions 1 to 4 (1 score each)**(4 × 1=4)**

1. Identify the statement which is **not the characteristic of DNA** and choose the correct option from the given statements. (1)

Statements:

- i. Two strands are present..
- ii. Adenine, Thymine, Uracil, and Guanine are the nitrogen bases.
- iii. The sugar deoxyribose is present.

- A. i and ii
- B. i and iii
- C. ii only
- D. iii only

2. Analyse the table and find out the correct one from the given options. (1)

A	B
P. Aldosterone	i. Controls sexual development
Q. Androgens	ii. Suppresses the Immune responses
R. Cortisol	iii. Regulates blood pressure
	iv. Helps in the body growth.

- A. P-ii, Q-iii, R-iv
- B. P-iii, Q-i, R-ii
- C. P-iv, Q-ii, R-i
- D. P-ii, Q-i, R-iii

- Statement:** Chemoreceptors help to sense taste.

A. Both the statement and the reason are correct.

B. Both the statement and the reason are incorrect.

C. The statement is correct, but the reason is incorrect.

D. The statement is incorrect, but the reason is correct.

- i. Slows down peristalsis.

- ii. Increases production of saliva.

- iii. Decreases heartbeat.

- iv. Decreases production of saliva.

A. i, ii correct iii, iv incorrect.

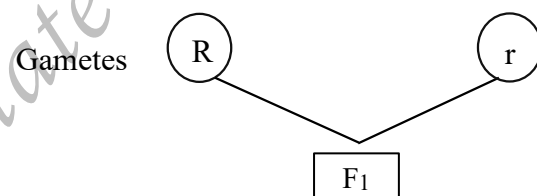
B. i, iii correct ii, iv incorrect

C. ii, iv correct i, iii incorrect

D. i, iv correct ii, iii incorrect

(7 x 2=14)

- | | | |
|-------------|---|---------------|
| Red flowers | x | White flowers |
| RR | x | rr |



- Write the genotype and phenotype of F₁.
- Illustrate the cross between the F₁ plant and the parent plant that produces white flowers.

(OR)

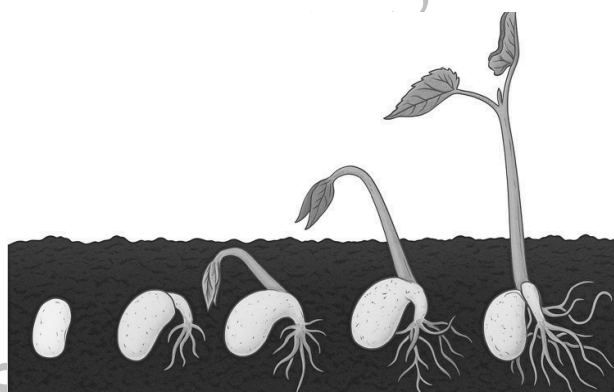
(B). When a tall plant producing round seeds was crossed with a dwarf plant producing wrinkled seeds, the genotype of the first generation obtained was **TtRr**.

- a) Which gametes are likely to be produced when this plant is self-pollinated ?
- b) Which phenotypes appear in the second generation that are different from the parent organisms?

6. Based on Darwin's theory of evolution, explain the following statement: (2)

"The variation in the beaks of finches in the Galapagos Islands resulted in their survival."

7. Explain the role of the following hormones in the process shown in the illustration. (2)



- Gibberellins
- Cytokinins

8. "Growth in technology plays an essential role in the survival and conservation of nature and its living beings." Write **two examples** that justify this statement. (2)

9. "Since the AB blood group does not have antibodies, it can receive blood from donors of any blood group". Do you agree with this statement? Why? (2)

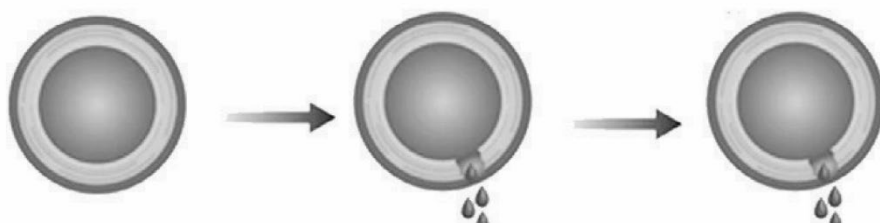
10. (A). Observe the following illustration of a communicable disease transmitted by mosquitoes and answer the given questions. (2)



- Identify the disease and write its symptoms.
- What precautions can be taken to prevent this disease?

(OR)

- (B). The illustration shows a disease that causes excessive bleeding even from small wounds. Observe it and answer the questions given below.



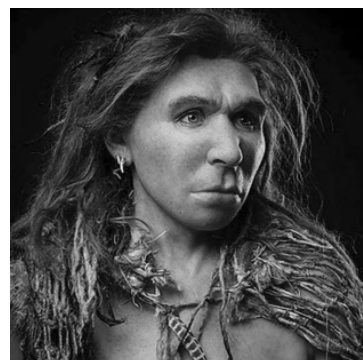
- Name the disease ? What is the cause of this disease?
- Suggest any one method of treatment for this disease.

11. An important trend in human evolution is illustrated.



Cranial capacity- 350cm^3

Organic evolution



Cranial capacity- 1350cm^3

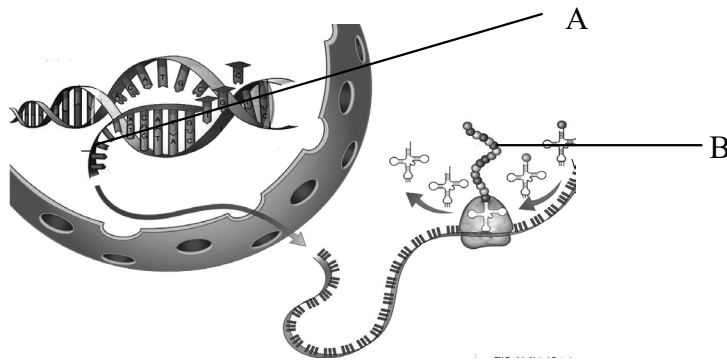
How has this change that occurred through the process of evolution influenced the survival of modern humans? (2)

Answer questions 12 to 17 . 3 scores each

(6 × 3=18)

12. Observe the illustration and answer the given questions..

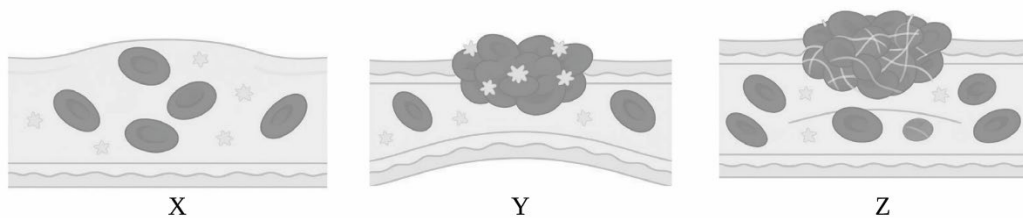
(3)



- How is the molecule A formed in this process?
- Explain the role of tRNA and rRNA in the formation of the molecule B.

13. (A). Analyse the illustrations X, Y, and Z and answer the questions.

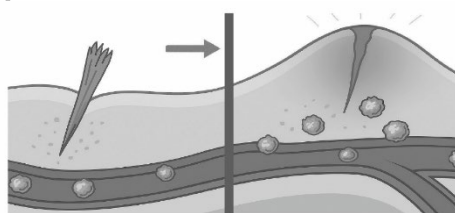
(3)



- Which immune mechanism is shown in the illustration?
- Explain how this process takes place.

(OR)

(B). Analyse the illustration and answer the questions.



- Which immune mechanism is shown in the illustration?
- How does this process help in destroying pathogens?

14. The different layers of cells in the retina are given as indicators. Write the function of each.

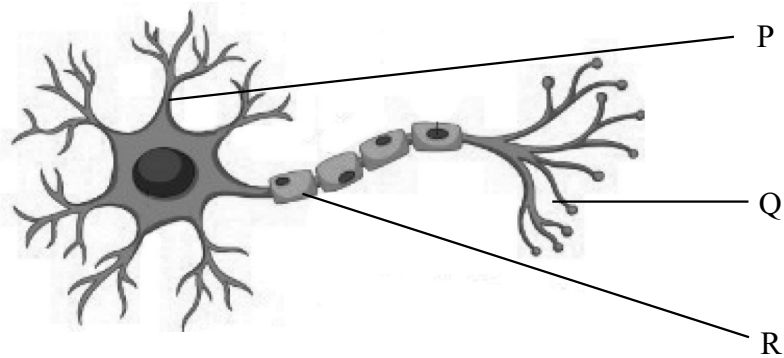
(3)

Indicators :

- Layer of photoreceptors
- Bipolar cell layer
- Ganglion cell layer

15. Redraw the diagram and answer the questions?

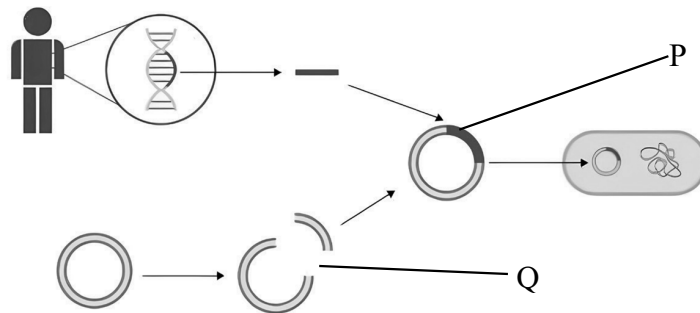
(3)



- Redraw the diagram.
- Name the parts labelled as P and Q.
- Write any one function of the part labelled as R.

16. (A). Analyse the illustration and answer the questions.

(3)



- Name the process? a) How does this process bring about changes in the genetic makeup of organisms?
- Write the names of the enzymes used in the processes P and Q.

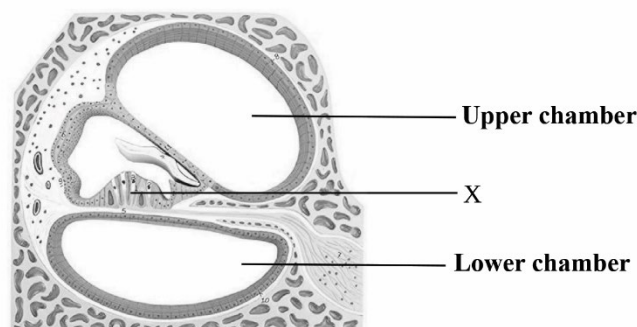
(OR)

(B). A description related to a gene-editing technology is given below. Analyse it and answer the questions.

“ The sequence of nitrogen bases in DNA is edited so as to make changes in the characteristic of an organism. Through that, unwanted characteristics can be removed or new characteristics can be added.”.

- Name the process mentioned in the description.
- What are the roles of **guide RNA** and **Cas9** in this technology?

17. The cochlea, which is part of the inner ear, is shown in the illustration. Observe it and answer the given questions. (3)

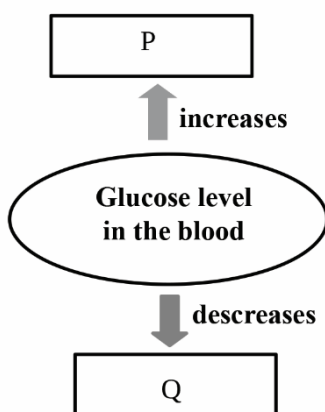


- Which fluid fills the upper and lower chambers?
- Write the name of the part labelled X. What is its importance in the hearing process?

Answer questions 18. 4 scores.

(1 x 4=4)

18. (A). P and Q are the hormones that regulate the glucose level in the blood. Observe the illustration and answer the given questions. (3)



- Which cells produce the hormone P? Write the name of the gland where these cells are found.
- Explain the role of the hormone Q in regulating blood glucose levels.
- Write any two lifestyle habits that should be adopted to control type 2 diabetes, which is commonly seen in children.

(OR)

- (B). Examine the indicators and explain their role in regulating the water balance in the body during summer and winter.

Indicators :

- Vasopressin
- Hypothalamus