

SSLC EXAMINATION, MARCH - 2026

BIOLOGY

Time : 1½ Hours

(English)

714657

Anita

Total Score : 40

Instructions :

- First 15 minutes is given as cool off time. You may use the time to read the questions and plan your answers.
- Read the questions carefully and answer the questions.
- Keep in mind the score and time while answering the questions.
- Choices are given for questions 6, 8, 12, 15 and 18.

Score

Answer questions from 1 to 4. Each carries 1 score.

4x1=4

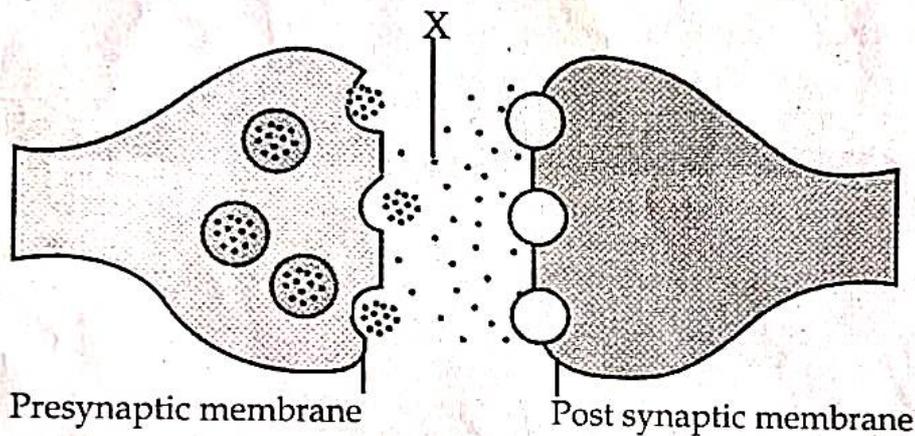
1. Which option correctly lists all three components of a single DNA nucleotide ? 1
- (a) Phosphate, two nitrogen bases and a deoxyribose sugar
(b) Deoxyribose sugar, a nitrogen base and a phosphate
(c) Deoxyribose sugar, two phosphates and a nitrogen base
(d) Deoxyribose sugar, phosphate and an amino acid
2. Which hormone maintains dormancy of seeds until favourable conditions ? 1
- (a) Auxin (b) Gibberellin
(c) Ethylene (d) Abscisic acid
3. Analyse the process of taste detection and choose the correct sequence of steps from the options given : 1
- Steps :
- (i) Substances dissolve in saliva.
(ii) Nerves carry impulses to brain.
(iii) Chemoreceptors generate impulses.
(iv) Substances reach the minute pores in the papilla.
- (a) (iii), (ii), (i), (iv) (b) (ii), (i), (iii), (iv)
(c) (i), (iv), (iii), (ii) (d) (i), (iii), (ii), (iv)
4. In gene therapy using stem cells, viruses are mainly used as vectors because they : 1
- (a) Help in inserting the active gene into stem cells.
(b) Destroy the defective gene in defective cells.
(c) Increase the number of stem cells in the body.
(d) Convert body cells into stem cells.

Answer questions from 5 to 11. Each carries 2 scores.

5. Mention the advantages of the following technological possibilities in environmental conservation.

- (a) Bioremediation *microorganisms* 1
- (b) Cryopreservation *sperms* 1

6. (A) Structure of synapse is given. Analyse it and answer the following questions.



- (a) Identify the chemical labelled as 'X'. 1
- (b) Mention their role in the transmission of impulse to only one direction. 1

OR

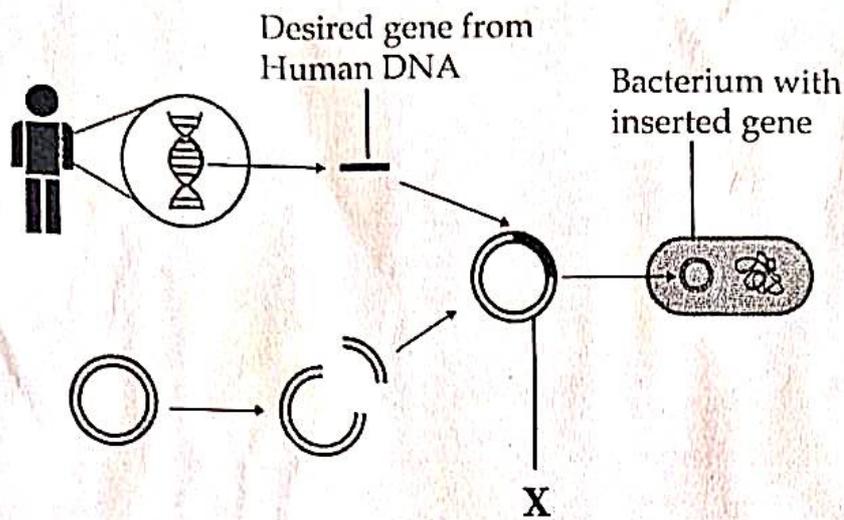
(B) When we feel fear or tension, the (heartbeat increases) and (digestion slows down without our control)

- (a) Name the division of the autonomic nervous system that controls these actions. 1
- (b) Write any two other actions controlled by this nervous system during such situations. 1

7. A doctor prescribes an antibiotic to a patient and advises continuing the full course even after the symptoms improve.

- (a) Identify the type of pathogen that can be destroyed using antibiotics. 1
- (b) Why is stopping the course too early considered a "major concern"? 1

8. (A) The steps involved in recombinant DNA technology is illustrated below:



- (a) Identify the DNA into which the cut human gene is ligated. 1
 (b) What happens when 'X' is inserted into the host cell? 1

OR

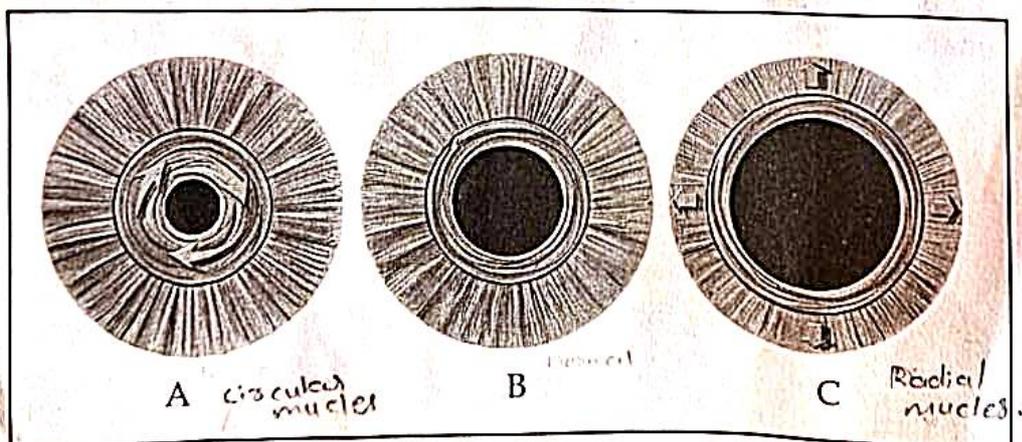
- (B) CRISPR is a modern technology used for precise DNA editing. 1

- (a) Explain the role of the following in this technology: 1

- Guide RNA
- Cas9 enzyme

- (b) How does CRISPR gene editing help to change the characteristics of an organism? 1

9. Analyse the figure given and answer the following questions.



- (a) Identify the figure related to clear vision in dim light. 1
 (b) Which muscular activities take place here? 1

10. After a wound occurs, several processes that help in blood clotting are initiated.

- (a) Which enzyme initiates these reactions? 1

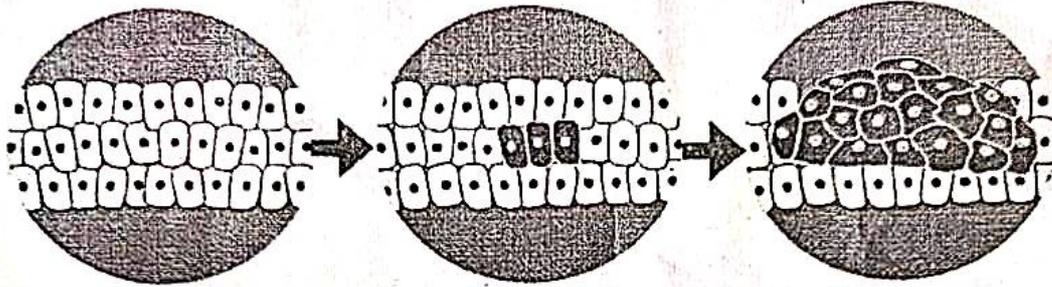
- (b) Explain how the activity of this enzyme helps the clotting mechanism. 1

15/ (A) A patient shows frequent fatigue and weakness. Blood examination reveals that some red blood cells are sickle-shaped. Based on these observations, answer the following :

- (a) Identify the reason for this disease. 1
 (b) In what other ways does this genetic defect affect the body? 2

OR

(B) ✓ Observe the illustration and answer the following questions.



Normal Cells

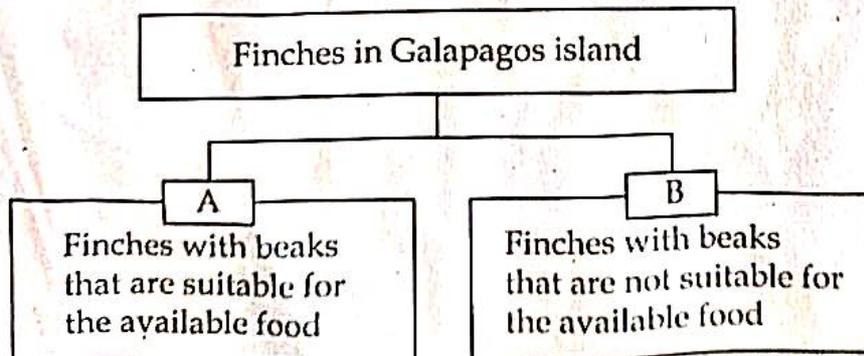
- (a) ✓ Which defect is shown in the illustration? 1
 (b) ✓ What are the reasons for the formation of abnormal cells? 1
 (c) ✓ Mention any two treatment measures of the disease. 1

16. ✓ Observe the given blood test result of a person and answer the following questions :

Blood Test	Amount of blood glucose
Fasting blood glucose (FBS)	90 mg/dL
HbA1c	6.7%

- (a) Is the fasting blood glucose value normal? 1
 (b) Is the given HbA1c value normal? Why? 1
 (c) ✓ Suggest any two life style habits that people should follow to maintain a normal blood glucose level. 1

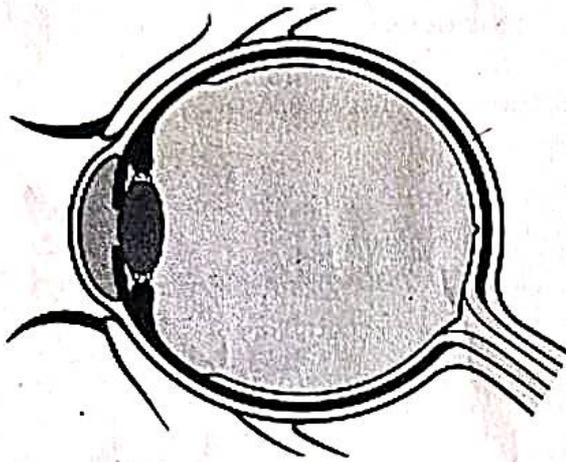
17. ✓ Analyse the illustration and answer the following questions.



- (a) ✓ What happens to finches in A and B categories in terms of survival? 1
 (b) ✓ What will happen to the population of finches that survive? 1
 (c) ✓ How can these changes in survival lead to the formation of new species of finches? 1

Answer question 18. It carries 4 scores.

- 18/ (A) Redraw the diagram. Label it by identifying the parts indicated in the statements given.



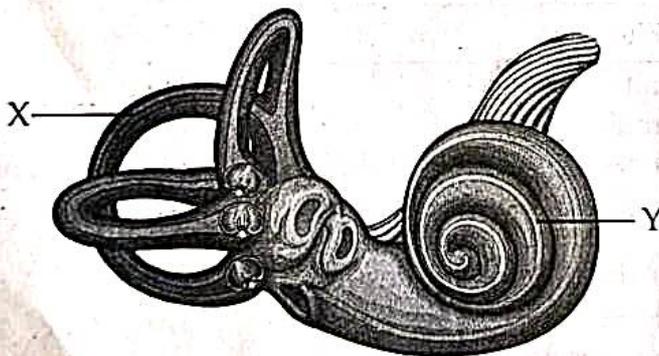
Sympathetic system

To redraw the diagram :

- | | | |
|-------|--|---|
| (a) ✓ | The part that allows light to enter the eye. | 1 |
| (b) | The part that adjusts the curvature of the lens. | 1 |
| (c) ✓ | The part where the cone cells are abundant. | 1 |

OR

- (B) Observe the illustration and answer the following questions.



- | | | |
|-----|---|---|
| (a) | Identify the parts labelled as 'X' and 'Y'. | 1 |
| (b) | What will be the effect of the rotational movement of head in 'X' ? | 1 |
| (c) | Write the processes in 'Y' that leads to hearing. | 2 |