

Sl. No.

SSLC EXAMINATION, MARCH - 2024

BIOLOGY

(English)

Time : 1½ Hours

Total Score : 40

Instructions :

- The first 15 minutes is cool-off time.
- You may use the time to read the questions and plan your answers.
- Answer only on the basis of instructions and questions given.
- Consider score and time while answering.

Answer any 5 questions from Q. No. 1 to 6. Each carries 1 score.

Score
5x1=5

1. Identify the pigment present in the given photoreceptor cell. 1



2. Which among the following is not a component of a nucleotide ? 1

- | | |
|---------------|-------------------|
| (a) Phosphate | (b) Sugar |
| (c) Protein | (d) Nitrogen base |

3. Find out the correct one from the given pairs. 1

- Monocyte : Stimulates other white blood cells.
- Lymphocyte : Engulfs and destroys germs.
- Neutrophil : Identifies and destroys germs specifically.
- Eosinophil : Synthesizes chemicals required for the inflammatory responses.

4. Identify the word pair relation and fill in the blank. 1

Fruit formation : Auxin

Ripening of fruits : _____

5. The technology used to identify the location of a gene in the DNA responsible for a particular trait is : 1
- (a) Gene therapy (b) Gene mapping
(c) DNA profiling (d) DNA finger printing
6. Correct the mistakes, if any in the underlined part of the given statements. 1
- (a) The Panspermia argues that life originated in some other planet in the universe and accidentally reached the earth.
- (b) Hugo de Vries is the scientist who put forward the scientific theory on evolution called Natural Selection theory.
- (c) Organs that are similar in structure and perform different functions are called homologous organs.

Answer any 6 questions from Q. No. 7 to 13. Each carries 2 scores.

6x2=12

7. Analyse the symptoms of a disease given and answer the questions.

Loss of memory, inability to recognize
friends and relatives.

- (a) Identify the disease 1
- (b) Write the cause of the disease 1
8. Analyse the given table related to the activities of hormones and complete it properly. 2

A (Causes)	B (Gland)	C (Disease)
____(i)____	____(ii)____	Cretinism
Reabsorption of water in the kidney decreases.	____(iii)____	____(iv)____

9. Analyse the illustration and answer the questions.

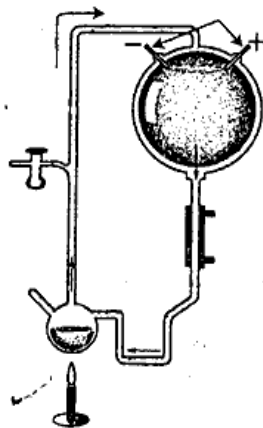


Stage 1 Stage 2 Stage 3

- (a) Identify the process. 1
- (b) What is the importance of this process ? 1
10. Write appropriate reasons for the given statements. 1
- (a) An ash coloured thick coating is formed in the throat of Diphtheria affected person. 1
- (b) Complete cure is not possible for Haemophilia. 1
11. Choose the activities of Sympathetic system from the box. 2

Production of saliva decreases, Urinary bladder contracts,
Gastric activities become Normal, Production of saliva
increases, Glycogen is converted to glucose.

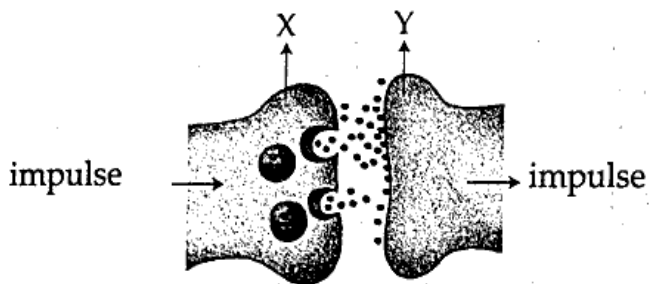
12. Analyse the illustration and answer the questions.



- (a) Which theory of evolution is proved by this experiment ? 1
- (b) What are the main postulates put forward by this theory ? 1
13. How does smoking harmfully affect the following organ systems ? 2
- Respiratory system
 - Circulatory system

Answer any 5 questions from Q. No. 14 to 20. Each carries 3 scores.

14. Observe the illustration of impulse transmission through synapse and answer the following questions.



- (a) Which part is denoted as 'X' ? 1
- (b) Which chemical is secreted from 'X' ? 1
- (c) Why impulses travel only from X to Y ? 1
15. Analyse the given stages in the process of detecting smell and write in sequential order. 3
- Experiences smell.
 - Aromatic particles enter the nostrils.
 - Generate impulses.
 - Stimulate the Olfactory receptors.
 - These aromatic particles dissolve in the mucus.
 - Impulses reach the brain.

16. Analyse the given table and arrange columns B and C according to column A.

A - Disease	B - Symptoms	C - Transmission
Tuberculosis	Dark yellow colour to the mucus membrane, white portion of the eyes and the nails.	Spread by culex mosquitoes.
Hepatitis	High fever with shivering and profuse sweating, headache, vomiting, diarrhoea and anaemia.	When the patient speaks, coughs or sneezes, the pathogens spread into the air.
Malaria	Loss of body weight, fatigue and persistent cough.	Contaminated food and water, blood components and excreta of the patient.
	Appearance of reddish scaly rashes that cause itching.	Spread by female anopheles mosquito.

17. Analyse the given statement and answer the questions.

3

"The basis of blood grouping is the presence of antigen A and antigen B in red blood cells".

According to this, how many blood groups are there in humans?

Write the antigen and antibody of each group.

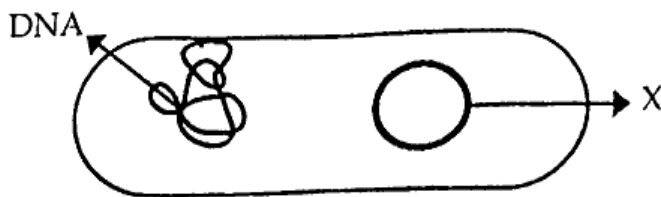
18. Some of the features of nucleic acids and their constituents are given below. Arrange them in the table suitably.

3

Ribose sugar, Uracil, Deoxyribose sugar, Double helical model, Single strand, Thymine.

DNA	RNA
•	•
•	•
•	•

19. Observe the illustration of bacteria and answer the questions.

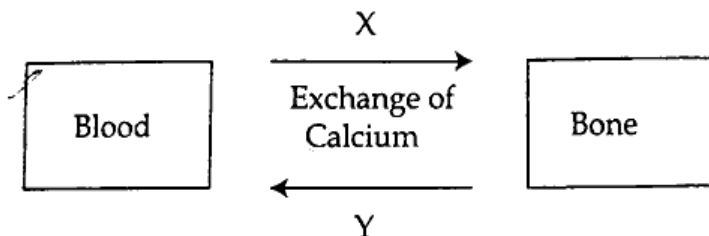


- (a) Which part is denoted as 'X' ? 1
 (b) What is the significance of 'X' in the process of genetic engineering ? 2
20. Write any three evidences from biochemistry and physiology to prove bacteria and humans evolved from a common ancestor. 3

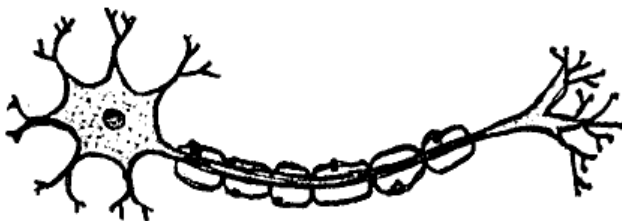
Answer any 2 questions from Q. No. 21 to 23. Each carries 4 score.

2x4=8

21. The function of regulating the level of calcium in the blood is illustrated. Analyse it and answer the following questions.



- (a) Which gland produces the hormone indicated as 'X' ? 1
 (b) Which hormone is indicated by 'Y' ? 1
 (c) Write down the other functions of these hormones. 2
22. Explain how the following strategies of defense help in immune function. 4
- (a) Phagocytosis (b) Fever
 (c) Healing of Wounds (d) Blood Clotting
23. Redraw the diagram, identify and label the parts with their names.



Redraw the diagram

- (a) The part that carries impulses out of the cell body. 1
 (b) The part that receives messages from the adjacent neuron. 1
 (c) The part that carries impulses to cell body. 1