S 1727

Sl. No.

SSLC EXAMINATION, MARCH - 2022

BIOLOGY

(English)

Time : 1½ Hours

Total Score : 40

General instructions :

- There is a 'cool-off time' of 15 minutes in addition to writing time. Use this time to get familiar with questions and to plan your answers.
- Questions with different scores are given as distinct parts.
- Read instructions carefully before answering the questions.
- Keep in mind, the score and time while answering the questions.
- The maximum score for questions from 1 to 24 will be 40.

Score

PART - I

A. Answer any 4 questions from 1 to 6. Each carries 1 score. 1=4

1. Identify the given photoreceptor cell. 1



2. If there is any mistake in the underlined part of the given statements, correct it.

(a) Chemical evolution theory was proposed by Oparin and Haldane.

(b) Organic molecules such as Nucleic acids are formed in Urey-Miller experiment.

3. Find the genetic constitution of the sperm. 1

(a) 44+X (b) 22+XX (c) 44+XX (d) 22+Y

4. Choose the correct pair. 1

- Dormancy of embryo : Cytokinin
- Sprouting of leaves : Abscisic acid
- Fruit formation : Gibberellin
- Ripening of leaves and fruits : Ethylene

Score

5. Identify the blood group which has the following peculiarities. 1

Antigen A	Antigen B	Antigen D
Nil	Present	Nil

6. The vector used in genetic engineering is : 1

(a) Ligase (b) Plasmid (c) tRNA (d) rRNA

B. Answer all questions from 7 to 9. Each carries 1 score. 3x1=3

7. Identify the word pair relationship and fill in the blanks. 1

Housefly : Ommatidia

Planaria : _____

8. Choose the action of sympathetic system from the following. 1

(a) Peristalsis become normal

(b) Heart beat increases

(c) Gastric activities becomes normal

(d) Trachea contracts

9. Based on the given model (A) complete (B). 1

(A) AIDS — Virus — HIV

(B) Rat fever — (i) — (ii)

Score

PART - II

A. Answer the following question. Carries 2 scores. **1x2=2**

10. Analyse given statement and answer the following questions.

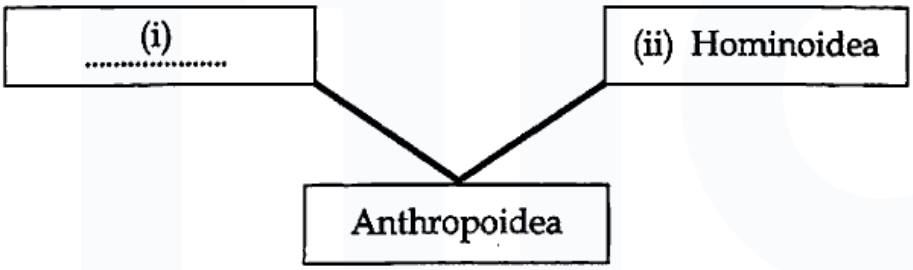
"Genetic engineering has made a great leap in the treatment of genetic diseases".

(a) Name the treatment method indicated. **1**

(b) What is the specific peculiarity of this treatment method ? **1**

B. Answer any 1 of the question from 11 and 12. Each carries 2 scores. **1x2=2**

11. Observe the illustration and answer the following questions.



(a) Fill (i). **1**

(b) What are the characteristics of organisms belong to (ii) ? **1**

12. Analyse the given genetic makeup and answer the questions.

44 + XX

(a) Give the number of somatic chromosomes. **1**

(b) Is the individual with this genetic makeup male or female ? Why ?

Score

PART - III

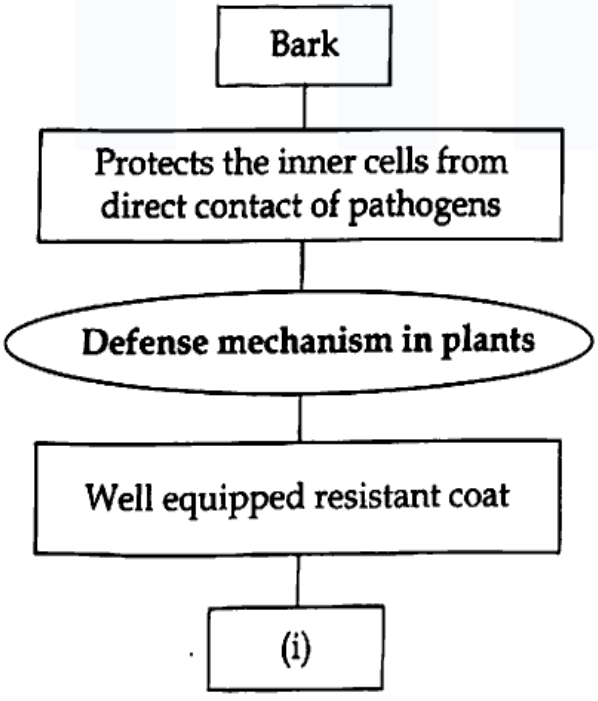
A. Answer any 3 questions from 13 to 16. Each carries 3 scores. 3x3=9

13. Analyse the given table and arrange Columns **B** and **C** according to Column **A**. 3

A	B	C
Cornea	The part of the retina where plenty of photoreceptors are present	Transmits impulses from photoreceptors to the visual centre in the brain
Pupil	The projected transparent anterior part of the sclera	Regulates the amount of light falling on the eyes
Yellow spot	The part of the retina from where the optic nerve begins	Refracts light rays to focus on the retina
	The aperture seen at the centre of the iris	Point of maximum visual clarity

14. Evaluate the statement and answer the questions.
"Ants moving in a line along a particular trail by the production of certain chemical substances".
(a) Such chemicals are known as _____. 1
(b) Write two examples for these chemical substances. 1
(c) Write other two uses of these chemicals substances. 1

15. Observe the illustration and answer the questions.



(a) Identify the part indicated (i). 1
(b) Name any two chemicals which provide rigidity to the part indicated (i). 1
(c) How do the germs that have crossed (i) are prevented from entering the cell ? 1

Score

16. Analyse the informations related to Tuberculosis and Malaria. 3

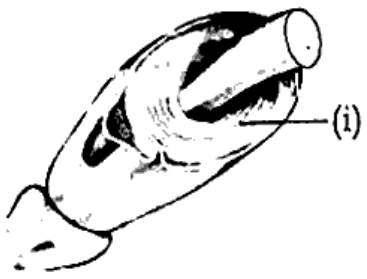
Classify them in the given table.

- Spread through air
- Bacteria is the pathogen
- High fever with shivering and profuse sweating
- Spread through Anopheles mosquito
- Loss of body weight, fatigue, persistent cough
- Protozoa is the pathogen

Tuberculosis	Malaria
•	•
•	•
•	•

B. Answer the following questions. Carries 3 scores. 1x3=3

17. Analyse the picture given below and answer the questions.



(a) Identify (i) . 1

(b) Write any two functions of this part. 2

Score

PART - IV

A. Answer any 2 questions from 18 to 20. Each carries 4 scores. **2x4=8**

18. Change in the shape of Red blood cells in a genetic disease is given below. Analyse it and answer the questions.

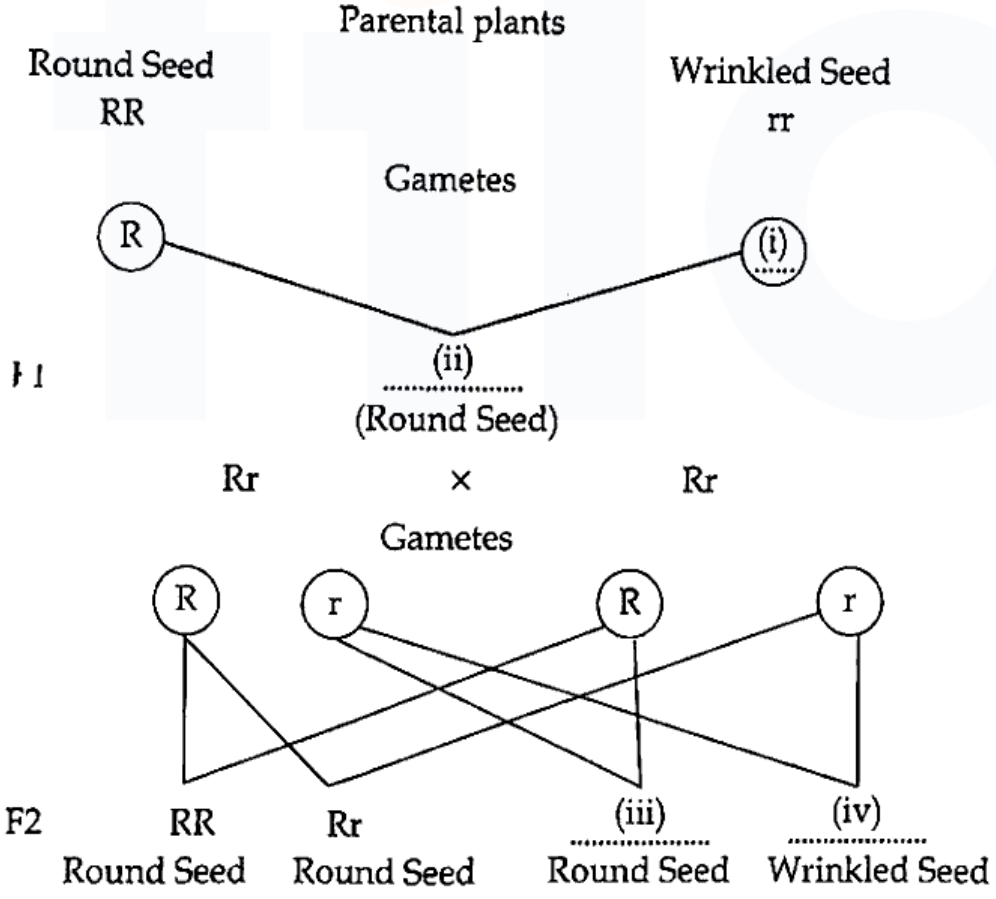


(a) Name the disease indicated. **1**

(b) Why do the shape of Red Blood Cells change ? **1**

(c) How does the deformity of red blood cells affect body ? **2**

19. Observe the illustration given below and answer the questions.



(a) Fill (i), (ii), (iii), (iv). **2**

(b) Which is the dominant character ? **1**

(c) Why does the recessive trait in the first generation appear in the second generation ? **1**

Score

20. The following are the main concepts of a theory of evolution. Analyse it and answer the following questions.

(i) Accumulation of variations inherited through generations.

(ii) Origin of new species.

(iii) Struggle for existence.

(iv) Favourable variations are transferred to the next generation.

(v) Those with no favourable variations are destroyed and survival of others.

(vi) Over production.

(a) Name of the evolutionary theory. 1

(b) Rearrange the concepts given above in sequential order. 3

B. Answer any 1 question from 21 and 22. Each carries 4 scores. **1x4=4**

21. The feature of a fluid in the eye is given below. Analyse it and answer the following questions.

It is formed from blood, and is reabsorbed into blood

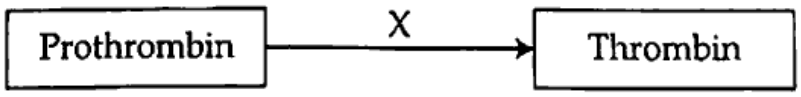
(a) Name the fluid. 1

(b) What is its function ? 1

(c) Name the eye disease associated with this fluid. 1

(d) How does this diseases can be rectified ? 1

22. Analyse the illustration related to the process of blood clotting and answer the following questions.



(a) Name the enzyme indicated as "X". 1

(b) How does this enzyme form ? 1

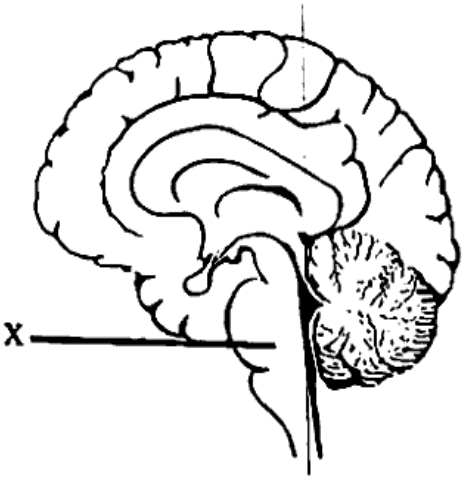
(c) Write the subsequent steps involved in this process. 2

Score

PART - V

A. Answer any 1 question from 23 and 24. Each carries 5 scores. 1x5=5

23. Redraw the diagram, and answer the following questions.



Redrawing diagram 1

(a) Identify and label the parts with their names.

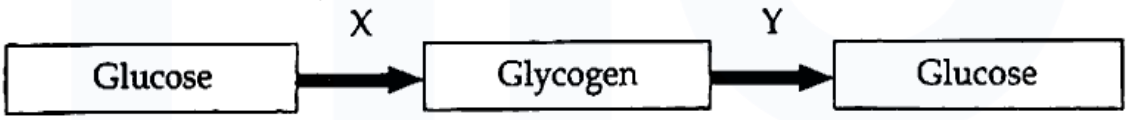
(i) Maintains equilibrium of the body 1

(ii) Controls voluntary movements 1

(iii) Acts as relay station of impulses 1

(b) Name the part labelled "X" and write its function. 1

24. Analyse the process related to the regulation of blood glucose level and answer the questions.



(a) Identify the hormones indicated as X and Y. 1

(b) Name the gland which produces these hormones. 1

(c) Name the disease caused due to the reduced production of the hormone X. 1

(d) Write the symptoms of this disease. 1

(e) Write another action of the hormone Y in regulating the level of glucose in blood. 1