

SSLC MODEL EXAMINATION, FEBRUARY - 2023

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 from Qn. No. 1 to 6. Each carries 1 score. Score
5x1=5

1. Find the word pair relation and fill in the blank. 1
Treatment of heart : Cardiology
Cancer treatment :
2. Correct mistakes if any in the underlined part of the given statements. 1
 - (a) The eye of an insect consists of a cluster of photoreceptors called eye spot.
 - (b) Chemoreceptors seen in the tongue help to detect taste.
 - (c) When the circular muscles contract in dim light, the size of the pupil increases.
 - (d) Cone cells contain a pigment called photopsin.
3. The technology helps to identify the location of a gene in the DNA responsible for a particular trait is : 1
 - (a) Gene therapy
 - (b) Gene mapping
 - (c) Genome
 - (d) Human Genome Project
4. Which process is indicated in the figure ? 1



5. Find out the odd one. What is the common feature of others ?

1

Cortisol, Glucagon, Aldosterone, Adrenaline.

6. Which theory of evolution is mentioned in the given statement ?

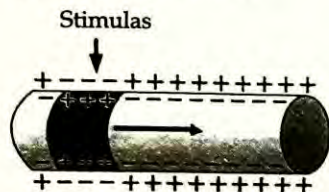
1

"New species are formed by the inheritance of the sudden changes that occur in the genes".

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

6x2=12

7. Analyse the illustration indicating the transmission of impulses through a neuron and answer the questions.



- (a) When stimulated, what change occur in the charges of ions inside and outside the plasma membrane ?

1

- (b) Does this change cause the transmission of impulses ? Why ?

1

8. A type of lymphocyte destroy pathogens by producing antibodies.

- (a) Which lymphocyte is mentioned here ?

1

- (b) Write any two methods by which antibodies produced by them destroy pathogens.

1


9. Choose suitable ones from those given below and arrange them in the table.

2

- (a) Under the control of autonomous nervous system
 (b) A thorn pricked the leg suddenly and leg was withdrawn
 (c) Light suddenly flashed and eyes were blinked
 (d) Under the control of the cerebrum
 (e) Under the control of the spinal cord

| Spinal reflex | Cerebral reflex |
|---------------|-----------------|
| | |

10. Complete the missing portions in the poster given below.



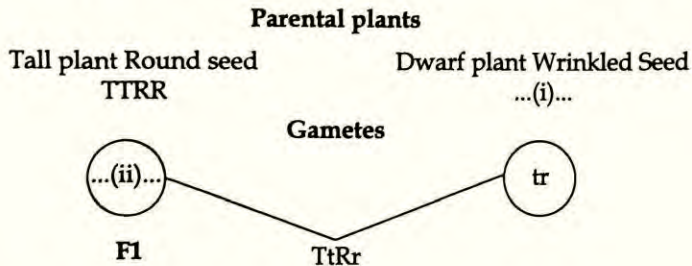
Diphtheria

Vaccination is the best preventive method

Pathogenic bacteria : (a)

Major symptoms : (b)

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



- (a) Fill in (i) and (ii). 1
- (b) What are the characters of the plant in the F1 ? 1
12. Identify the disease from the hints given below and answer the questions.
- Excess blood is lost even from minor wounds.
 - As it is a genetic disease, a complete cure is not possible.
- (a) How does the defect of gene cause this disease ? 1
- (b) How does temporary relief is brought in, in these patients ? 1
13. Read the statement and give reason. 2

The structure of forelimbs in lizard, bat, whale etc. differ in their external appearance even if they are similar in their internal structure.

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

14. Analyse the table given below and rearrange columns B and C in accordance to column A. 3

| A | B | C |
|-----------------|---|---|
| Oval window | Connects the middle ear and the pharynx. | Vibrates in resonance with sound waves. |
| Eustachian tube | Membrane seen attached to the stapes. | Carries sound waves to the auditory canal. |
| Tympanum | Part where small hairs and wax present. | Balances the pressure on either side of the tympanum. |
| | A thin circular membrane that separates the middle ear from the external ear. | Spreads the vibration of ear ossicles to the inner ear. |

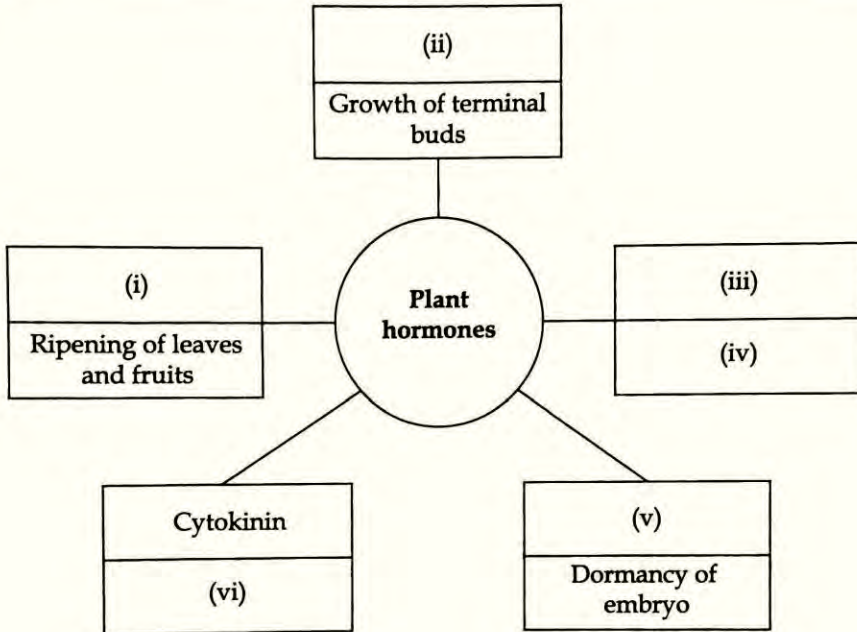
15. Observe the illustration and answer the questions.



- (a) Identify the part indicated as X? Which is the fluid present in this part? 1
- (b) Write the name of the parts Y and Z. 1
- (c) Is the same type of impulses pass through Y and Z. Why? 1

16. Information regarding plant hormones are given in the box. Choose the appropriate ones and complete the illustration.

• Abscisic acid • Cytokinin • Auxin
 • Break down of stored food to facilitate germination • Ethylene
 • Gibberellin • Cell differentiation



17. Observe the illustration related to protein synthesis and answer the questions.



- (a) Identify the parts indicated as X and Y. 1
- (b) What is the role of X in this process? 1
- (c) What are the processes occur in part indicated as Y? 1

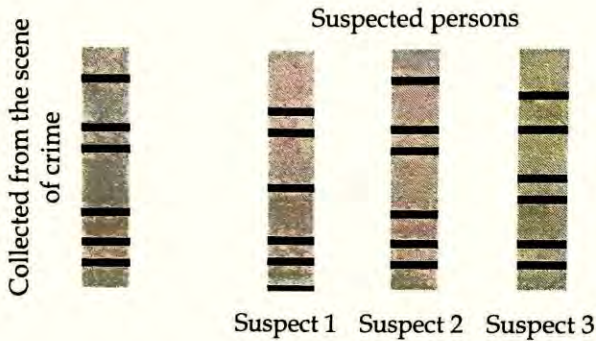


18. Analyse the information given in the box and answer the questions.

Fatty liver, Malaria, Stroke, Sickle cell anaemia, Hepatitis

- (a) Which are the life style diseases ? 1
- (b) Write any four healthy habits that should be adopted to prevent lifestyle diseases. 2

19. Analyse the illustration regarding the test samples in DNA finger printing and answer the questions.



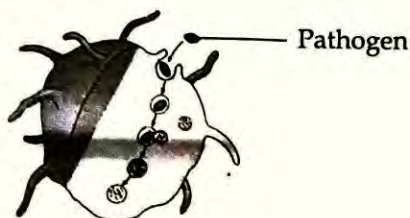
- (a) What conclusion can be drawn from the sample examination ? 1
- (b) What is the basis of the technology DNA finger printing ? 1
- (c) Write two other uses of this technology. 1

20. Stages of chemical evolution are given below. Arrange them in the sequential order. 3

- (a) Formation of complex organic molecules
- (b) Formation of the atmosphere of primitive earth
- (c) Formation of simple organic molecule
- (d) Formation of oceans
- (e) Primitive cell
- (f) Nucleic acids, lipid layer

Answer any 2 from Qn. No. 21 to 23. Each carries 4 scores.

21. Observe the illustration and answer the following questions.



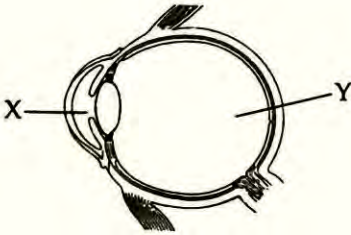
- (a) Identify the defense mechanism mentioned above. 1
- (b) Which are the white blood cells participate in this process ? 1
- (c) How pathogens are destroyed by this process ? 2

22. Name of some hormones are given below, analyse them and answer the questions.

Oxytocin, Somatotropin, Inhibitory hormones, Vasopressin, Prolactin, Releasing hormones, Melatonin.

- (a) Which are the hormones secreted by the pituitary gland ? 1
- (b) Name any one hormone which is stored in the posterior lobe of pituitary gland and write its function. 1
- (c) Which are the hormones secreted by the hypothalamus that control the pituitary gland. 1
- (d) How do these hormones regulate the function of the pituitary gland ? 1

23. Redraw the diagram and answer the questions.



For redrawing 1

- (a) Identify and label the parts.
- (i) Transmits impulses to the visual centre in the brain. 1
- (ii) The point of maximum visual clarity. 1
- (b) How do the fluids labelled as X, Y differ in their functions. 1

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