

Sl. No.

SSLC MODEL EXAMINATION, FEBRUARY - 2020

BIOLOGY

(English)

Time : 1½ Hours

Total Score : 40

Instructions :

- The first 15 minutes is the 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.

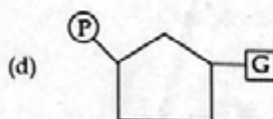
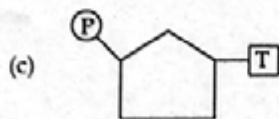
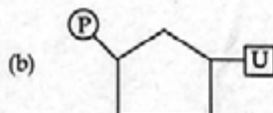
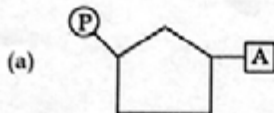
Score

5x1=5

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

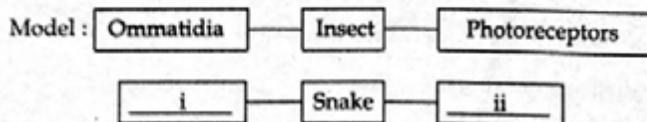
1. Select the nucleotide that is present only in RNA from the following :

1

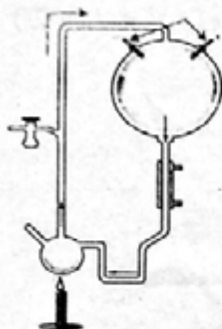


2. Analyse the given model and complete the illustration.

1



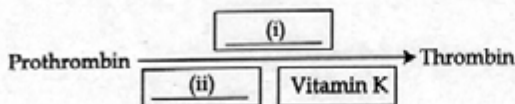
3. Identify the evolutionary theory which is substantiated by the given experimental set-up. 1



4. Choose the correct pair from the answers given below by analysing the statements. 1
- (i) Gibberellins stimulates breakdown of stored food to facilitate germination.
 (ii) Cytokinin helps in the ripening of leaves and fruits.
 (iii) Abscisic acid helps in the dropping of ripened leaves and fruits.
 (iv) Ethylene helps in the elongation of stem and growth of terminal bud.

Answers :

- (a) (i), (iv) True (b) (iii), (iv) True
 (c) (i), (iii) True (d) (i), (ii) True
5. Identify the word pair relation and fill the blanks. 1
- Somatotropin : Growth disorders
 Interferons : _____
6. Analyse the given illustration and complete (i) and (ii) suitably. 1



Hint : (i) Enzyme, (ii) Ion

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

6x2=12

7. Give suitable explanations for each statement given below.

- (a) Synapses are of different types. 1
 (b) Spinal nerves are mixed nerves. 1

8. Rearrange Column B according to Column A.

A	B
Heart attack	Deposition of excess fat in the liver
Fatty liver	Decrease in the diameter of arteries due to deposition of fat
Stroke	Deficiency of insulin/its malfunctioning
Hypertension	Rupture of blood vessels in the brain
	Block of blood flow due to deposition of fat in coronary artery

9. "Bacteria and man are different in their external appearance but there are close resemblances in their cell structure and physiology". Give two examples to the similarities indicated in the statement.

1x2=2

10. Complete the table.

 $\frac{1}{2} \times 4 = 2$

White blood cells	Defense Action
(i)	Dilates the blood vessels
Eosinophil	(ii)
Monocyte	(iii)
(iv)	Identifies and destroys germs specifically

11. Given below are the symptoms of a disease. Analyse them and answer the following questions.

- Loss of memory
 - Inability to do routine works
- (a) Identify the disease
- (b) Mention the cause of the disease

1

1

12. Analyse the illustration and answer the questions.



- (a) Which process does the illustration indicate ?
- (b) What is the role of this process in generating variations ?

1

1

13. Analyse the news and answer the questions.

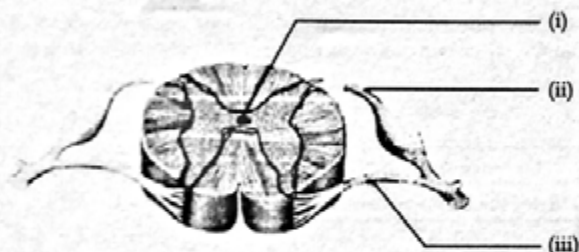
Diphtheria case confirmed in Calcutta

- (a) Identify the pathogen of disease indicated in the news.
 (b) How does this pathogen cause disease ?

1
 $5 \times 3 = 15$

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

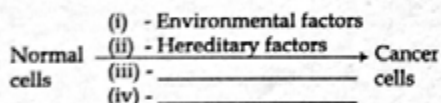
14. Observe the illustration and answer the questions.



- (a) Identify the part labelled as (i).
 (b) What is the difference between the impulses transmitted through (ii) and (iii) ?

1
 2

15. Analyse the illustration and answer the questions.



- (a) Complete (iii) and (iv).
 (b) How do cancer cells differ from normal cells ?
 (c) Why is early diagnosis of cancer is so crucial in the treatment of cancer ?

$\frac{1}{2} + \frac{1}{2} = 1$
 1
 1

16. Rearrange the stages of insulin production in the correct order.

$\frac{1}{2} \times 6 = 3$

- Joining insulin gene with plasmid
- Cutting of insulin gene from Human DNA
- Isolation of plasmid from bacterium
- Produce inactive insulin
- Plasmid with ligated insulin gene is inserted into bacterial cell
- Active insulin is produced

17. Observe the figure and answer the questions.

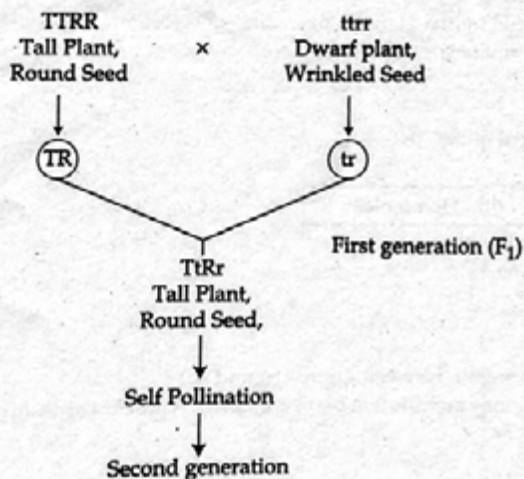


- (a) Identify the parts indicated as (i) and (ii).
 (b) How do (iii) and (iv) help in maintaining the balance of the body?

 $\frac{1}{2} \times 2 = 1$

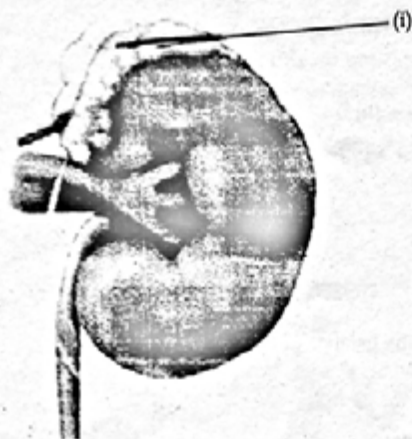
2

18. Observe the illustration and answer the questions.



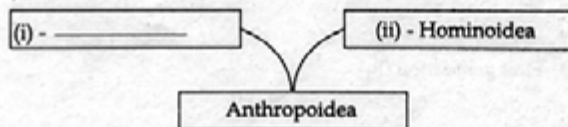
- (a) Identify the alleles in the first generation plant related to the trait, tallness. 1
 (b) What may be the characters expressed in the second generation plants? 1
 (c) Why do the characters which are not expressed in parents appear in offsprings? 1

19. Observe the figure and answer the questions.



- (a) Identify the gland indicated as (i). 1
 (b) Which are the hormones produced by the gland to overcome emergency situations? 1
 (c) How do these hormones co-ordinate the activity of nervous system and endocrine system? 1

20. Analyse the illustration and answer the questions.



- (a) Fill (i) appropriately. 1
 (b) What are the features that differentiate between groups (i) and (ii)? 1
 (c) What evidence does molecular biology provide that the Chimpanzee is the closest creature to humans, in evolutionary grounds? 1

Answer any two from Q. No. 21 to 23. Each carries 4 scores.

2x4=8

21. Analyse the statement given below and answer the questions.

"When pathogens enter, body temperature raises. It is a defense mechanism of the body".

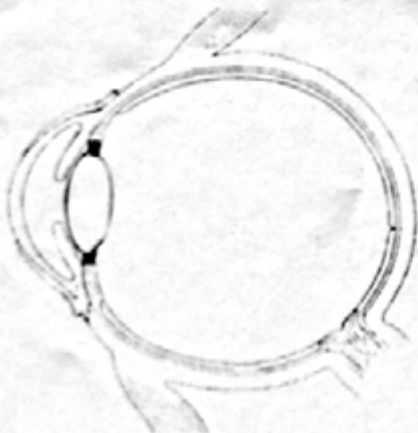
- (a) What is the normal temperature of the human body? 1
 (b) Why does body temperature raise when pathogens enter the body? 1
 (c) Raise in body temperature is considered as a defense mechanism. Why? 2

22. Observe the figure and answer the questions.



- (a) Identify the cells indicated as (i) and (ii). 1
 (b) How does the hormone produced in (i) control the blood glucose level? 1
 (c) Hormones act only upon target cells. Why? 2

23. Redraw the diagram. Identify the parts from the hints given and label them. 4



- (a) The part where the pigment melanin is present.
 (b) The part of Retina where there is no photoreceptors.
 (c) The part filled with fluid, which is formed from blood and is reabsorbed into blood.