

HS/XI/Sc/Bio/19**2019****BIOLOGY****(Theory)***Full Marks : 70**Time : 3 hours**General Instructions :*

- (i) This question paper consists of 5 Sections A, B, C, D and E. Section A consist of A₁ and A₂. Section A₁ consist of 5 questions of one marks each. Section A₂ consists of 5 questions of one marks each. Section B consist of 7 questions of two marks each, Section C is of 9 questions of three marks each, Section D consist of 1 question of four mark and section E is of 3 questions of 5 marks each.
- (ii) All questions are compulsory.
- (iii) There is no overall choice. However, an internal choice has been provided in two questions of two marks, in two questions of three marks and in all the three questions of five marks weightage. Attempt only one of the choices in such questions.

- (iv) Question numbers 6–10 are to be answered in one word or one sentence each.
- (v) Question numbers 11–17 are to be answered in approximately 20–30 words each.
- (vi) Question numbers 18–26 are to be answered in approximately 30–50 words each.
- (vii) Question number 27 is to be answered in approximately 70–100 words.
- (viii) Question numbers 28–30 are to be answered in approximately 80–120 words.

SECTION – A₁*Choose the correct answer :* $1 \times 5 = 5$

- 1. Which of the following contains hydrolytic enzymes?
 - (a) Ribosome
 - (b) Lysosome
 - (c) Plastids
 - (d) Mitochondria.

(3)

2. Synapsis occurs during
- (a) Leptotene
 - (b) Zygotene
 - (c) Pachytene
 - (d) Diplotene.
3. Which of the following is a modified root ?
- (a) Potato
 - (b) Sweet potato
 - (c) Ginger
 - (d) Onion.
4. The Non-Nucleated cell found in blood is
- (a) RBC
 - (b) WBC
 - (c) Thrombocytes
 - (d) All the above.
5. The hormone secreted by pineal gland is
- (a) Melanin
 - (b) Melatonin
 - (c) Melanocytes
 - (d) All the above.

(4)

SECTION – A₂

(Very short answer)

1 × 5 = 5

6. Define Plasmolysis.
7. What are saprophytes?
8. Which hormonal deficiency is responsible for diabetes mellitus?
9. Name any two types of nitrogenous base found in nucleic acids.
10. Give the scientific name of cockroach.

SECTION – B

(Short answer – 1)

2 × 7 = 14

11. *Either,*
Give the salient features of mosses.
Or
Write down the characteristic features of dinoflagellates.

(5)

12. What is inflorescence ? Define racemose inflorescence with examples. $1 + 1 = 2$

13. Name any two micronutrients and mention atleast one deficiency symptom for each. $1 + 1 = 2$

14. What is a peptide bond? How are they formed? $1 + 1 = 2$

15. Draw a well labelled diagram of a myelinated neuron. 2

16. What is the role of HCl in digestion? 2

17. *Either*
Differentiate between open circulatory system and closed circulatory system. 2

Or
Differentiate between ammonotelic and ureotelic excretion. 2

SECTION — C
(Short answer – II) $3 \times 9 = 27$

18. *Either*
Explain different types of simple tissues found in plants. Give suitable diagrams. $2 + 1 = 3$

Or

(6)

With the help of a suitable diagram explain the internal structure of monocot stem. $1 + 2 = 3$

19. Describe briefly the four major groups of Protozoa. To which group does the malarial parasite belong. $2 + 1 = 3$

20. Give a labelled diagram of a plant cell. Explain the function of cell membrane. $2 + 1 = 3$

21. Explain the electron transport system in the light reaction of photosynthesis.

22. How is a “pull” created during transpiration.

23. Write three diagnostic characters of chordates.

24. Describe briefly any three factors affecting enzyme activity.

25. Draw a labelled diagram of a myofibril of skeletal muscle showing different region.

26. *Either*
Explain conduction of nerve impulse along a nerve fibre.

(7)

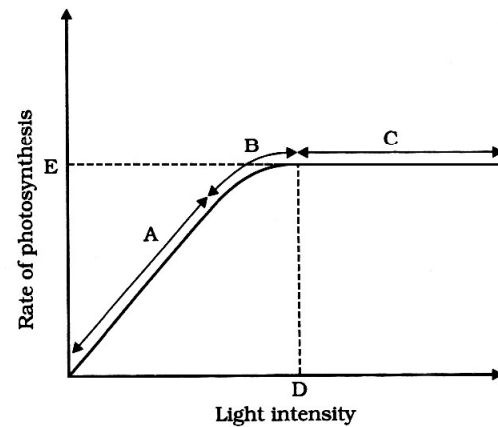
Or

Explain the transmission of nerve impulse across a synapse.

SECTION – D

27. Value based question

4 × 1 = 4



The above figure shows the effect of light on the rate of photosynthesis. Based on the graph, answer the following questions.

- (a) At which region(s) (A, B or C) in the curve is light a limiting factor ? 1
- (b) What could be the limiting factor(s) in region A ? 1
- (c) What do C and D represent on the curve ? 2

(8)

SECTION – E

(Long answer type)

5 × 3 = 15

28. Either

Explain the process of glycolysis.

Or

Write a note on C₄ pathway.

29. Either

Give an account of Calvin cycle.

Or

Mention the characteristics of phylum Arthropoda.

30. Either

Describe in detail the digestion of protein as they pass through the human digestive system.

Or

Describe the process of urine formation in humans.

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