HS/XI/Sc/Bio/20

2020

BIOLOGY

(Theory)

Full Marks : 70

Time : 3 hours

General Instructions :

This question paper consists of 5 (five) sections:

(i) Section A consists of two parts A_1 and A_2.

A_1 consists of 5 (five) questions (Q1 – Q5) which are multiple choice questions, of one mark each; should be answered together in one place.

A_2 consists of 5 (five) questions (Q6 – Q10) of one mark each, to be answered in one word or one sentence.

(ii) Section B consists of 7 (seven) questions (Q11 to Q17) of two marks; to be answered in approximately 20 – 30 words each.

(iii) Section C consists of 9 (nine) questions (Q18 – Q26) of three marks each to be answered in 30 – 50 words each.

(iv) Section D consists of 1 (one) question (Q27) of 4 marks, to be answered in approximately 70 – 100 words.

(v) Section E consists of 3 (three) questions (Q28 to Q30) of 5 marks each, to be answered in approximately 80 – 120 words.

SECTION – A_1

Choose and write the correct answer : $1 \times 5 = 5$

1. The term "Virus" was coined by

(a) Louis Pasteur

(b) D. J. Ivanowsky

(c) W. M. Stanley

(d) M. W. Beijerinck.

2. In cockroach, excretion is performed by

(a) thorax

(b) abdomen

(c) trachea

(d) Malpighian tubules.

3. This organelle manufactures proteins for the cell

(a) Mitochondria

(b) Ribosome

(c) Nucleus

(d) Chloroplast.

4. Polymorphism is the characteristic feature of phylum

(a) Porifera

(b) Cnidaria

(c) Ctenophora

(d) Platyhelminthes.

5. Water vascular system is present in animals belonging to the Phylum

(a) Porifera

(b) Arthropoda

(c) Echinodermata

(d) Mollusca.

SECTION – A_2

(Very short answer) $1 \times 5 = 5$

6. What is the scientific name of Rohu?

7. Define Parthenocarpic fruits.

8. Name one respiratory disorder in man.

9. Differentiate between passive and active transport.

10. Name the red pigment present in the members of Rhodophyceae.

SECTION – B

(Short answer – I) $2 \times 7 = 14$

11. Draw a well labelled diagram of a transverse section of a dicot leaf.

12. Name the bonds that bind amino acids in a protein and monosaccharides in carbohydrates.

13. Differentiate between prokaryotic and eukaryotic cells.

14. Draw a labelled diagram of human eye.

15. Which plant growth regulators would be used for $1 + 1 = 2$

(a) delaying leaf senescence

(b) quick ripening of fruits

16. Define Respiratory Quotient. What is its value for fats? $1 + 1 = 2$

17. Differentiate between any one of the following:

(a) Blood and Lymph

(b) Actin and Myosin

SECTION — C

(Short answer – II) 3 × 9 = 27

18. Write down the characteristic features of Deuteromycetes.

Or

Give an outline of Five Kingdom classification. Who proposed this classification? 2 + 1 = 3

19. Name the factors affecting enzyme activity. Describe any one. 1 + 2 = 3

20. Distinguish between Osmosis and Diffusion.

21. With the help of a suitable diagram, briefly describe the structure of chloroplast. 1 + 2 = 3

22. Name the two types of nucleic acids. Give the differences between them. 1 + 2 = 3

23. Bile juices contain no digestive enzymes, yet it is important for digestion. Why?

Or

Define the terms "thecodont" and "diphyodont" with examples. 1 + 1 + 1 = 3

24. List the hormones secreted by the following: 1 × 3 = 3

(a) Pancreas

(b) Ovary

(c) Kidney.

25. Draw a labelled diagram of a nephron.

26. Describe the different types of phyllotaxy with suitable diagrams. 2 + 1 = 3

SECTION – D

27. Briefly describe the different types of connective tissue. 4

Or

RuBisCO is an enzyme that acts both as a carboxylase and a oxygenase. Why do you think RuBisCO carries out more carboxylation in C_4 plants? 4

SECTION – E

(Long answer type) 5 × 3 = 15

28. Describe the mechanism of opening and closing of stomata.

Or

Mention the important characteristics of phylum Annelida.

29. What are endocrine glands? How are they different from exocrine glands? List the different hormones produced by pituitary gland. 1 + 2 + 2 = 5

Or

Describe the mechanism of blood clotting.

30. Give an account of citric acid cycle with suitable a diagram.

Or

Describe the non-cyclic photophosphorylation in plants. Is NADPH produced during cyclic photophosphorylation? 4 + 1 = 5

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