Meghalaya Board of School Education

SAMPLE PAPERS

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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. Which of the following is a modified root

(a) Potato

(b) Sweet potato

(c) Ginger

(d) Onion

2. Water vascular system is present in animals belonging to phylum

(a) Arthropoda

(b) Annelida

(c) Mollusca

(d) Echinodermata

3. In Australian acacia, the leaves are modified into

(a) Spines

(b) Tendrils

(c) Swollen, green petiole for synthesis of food.

(d) Pitcher.

4. In which cell organelles synthesis of protein takes place

(a) Golgi complex

(b) Ribosomes

(c) Mitochondria

(d) Plastids

5. The hormone secreted by pineal gland is

(a) Melanin

(b) Melatonin

(c) Melanocytes

(d) Calcitonin.

SECTION – A_2

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

6. Where is the hunger centre located in the human brain? 1

7. What are pneumatophores? 1

8. Name the end product of Glycolysis. 1

9. Which hormone acts as a stress hormone? 1

10. Name the protein-rich layer found in Euglenoids. 1

SECTION – B

(Short answer – I) $2 \times 7 = 14$

11. Why are bryophytes called as "Amphibians" of the plant kingdom? 2

Or

Define Binomial Nomenclature. Give one example. 1 + 1 = 2

12. Why are Deuteromycetes called as "Imperfect fungi"? 2

13. What are viruses? Who discovered virus? 1 + 1 = 2

14. Draw a labelled diagram of a human heart. 2

15. Define biomacromolecules. Give an example. 1 + 1 = 2

16. State the "Law of Limiting Factors". 2

17. Name the protective covering of the brain. 2

Or

Old people usually suffer from inflamed and stiff joints. What is this condition called? State the reasons for the symptoms. 1 + 1 = 2

SECTION — C

(Short answer – II) $3 \times 9 = 27$

18. On what criteria is the five kingdom classification of organisms based? 3

Or

Mention the important characteristics of Gymnosperms. 3

19. Describe the structure of mitochondria with the help of a diagram. 2 + 1 = 3

20. Differentiate between plant cells and animal cells. 3

21. Why photorespiration does not take place in C_4 plants? Explain. 3

22. Explain the mechanism of enzyme action. 3

23. Briefly describe the phases of growth with the help of a growth curve. 2 + 1 = 3

Or

Define inflorescence. Differentiate between the racemose and cymose type of inflorescence. 1 + 2 = 3

24. Give the importance of Liver, Lungs and Skin in excretion. 3

25. Explain the mechanism of coagulation of blood. 3

26. Draw a labelled diagram of location of Endocrine glands in human body. 3

Or

Why Pituitary gland is called as “Master gland”? 3

SECTION – D

27. Describe the mechanism of Urine formation in humans. 1 + 3 = 4

Or

Describe the different types of phyllotaxy with suitable diagrams. 3 + 1 = 4

SECTION – E

(Long answer type)

28. Explain conduction of nerve impulse along a nerve fibre. 5

Or

Draw and explain the Tricarboxylic acid cycle (Kreb’s cycle) 1 + 4 = 5

29. Describe the process of digestion in Frogs with the help of a diagram. 4 + 1 = 5

Or

Define muscle. Name the different type of muscles based on their location. Differentiate between straited muscle and Non-straited muscle. 1 + 1 + 3 = 5

30. Define mitosis. Describe the different phases of mitosis with well labelled diagrams. ½ + 2½ + 2 = 5

Or

With a labelled diagram describe the internal structures of a dorsiventral leaf. 1 + 4 = 5

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