

**Nagaland
Class XI
Biology
Sample Paper-2**

Time allowed: 3 hours

Maximum Marks: 70

General Instructions:

- i. Approximately 15 minutes is allotted to read the question paper and revise the answer.
- ii. All questions are compulsory. Marks are indicated against each question.
- iii. The question paper consists of two parts – Part A and Part B.
Each part contains 14 questions.
- iv. Internal choice has been provided in some questions.
- v. Write the answers of Part A and Part B in separate answer books.
Marks shall not be awarded if the answers of both the Part are written in one book nor marks awarded if answers of Part A are written in the answer book of Part B and vice-versa.

N.B: Check that all pages of the question paper is complete as indicated on the top left side.

PART - A

- 1.** Gibberellins promote [1]
 - (a) seed germination
 - (b) seed dormancy
 - (c) leaf fall
 - (d) root elongation

- 2.** All enzymes of the TCA cycle are located in the mitochondrial matrix except one which is located in the inner mitochondrial membrane in eukaryotes and in the cytosol in prokaryotes. This enzyme is [1]
 - (a) Lactate dehydrogenase
 - (b) Isocitrate dehydrogenase
 - (c) Malate dehydrogenase
 - (d) Succinate dehydrogenase

- 3.** Molybdenum is the essential constituent of [1]
 - (a) Nitrogenase
 - (b) Respiratory chain
 - (c) Growth regulators
 - (d) Chlorophyll

4. What is the fate of the primary xylem in a dicot root showing extensive secondary growth? [1]
 - (a) It is retained in the centre of the axis
 - (b) It gets crushed
 - (c) May or may not get crushed
 - (d) It gets surrounded by primary phloem

5. The fruit of groundnut is [1]
 - (a) Legume
 - (b) Caryopsis
 - (c) Berry
 - (d) Nut

6. How do gibberellins help in increasing the sugar yield? [2]

7. Consider a plant which lacks chlorophyll *a* but has chlorophyll *b*; will it carry out photosynthesis? What is the role of chlorophyll *b* and other accessory pigments?[2]

8. What is nitrogen fixation? State the two natural sources to provide energy for nitrogen fixation. [2]

9. Explain the modes of reproduction in *Ulothrix*. [3]

10. Explain how the stem is involved in reproduction in jasmine and *Chrysanthemum* [3]

Or

Draw a well-labelled diagram of the regions of the root tip

11. Explain the method of hydroponics [3]

12. With the help of a diagram explain the light-harvesting complex (LHC). [5]

Or

Give a detailed account of the Hatch and Slack pathway with the help of a diagram.

13. Describe the events which occur during the life cycle of an angiosperm [5]

Or

Describe the different regions of the root

14. Describe the structure of a monocotyledonous seed. [5]

Or

Describe the events which occur during the life cycle of an angiosperm

PART – B

- 1.** Bioluminescence is commonly seen in [1]
 - (a) Annelida
 - (b) Ctenophora
 - (c) Echinodermata
 - (d) Porifera

- 2.** Which of the following is absent from the coelomic fluid of earthworm? [1]
 - (a) Salt
 - (b) Haemoglobin
 - (c) Corpuscles
 - (d) Proteins

- 3.** Name the hormone which stimulates the secretion of gastric juice. [1]
 - (a) Renin
 - (b) Enterokinase
 - (c) Enterogastrone
 - (d) Gastrin

- 4.** In breathing movements, the air volume can be estimated by [1]
 - (a) Stethoscope
 - (b) Hygrometer
 - (c) Sphygmomanometer
 - (d) Spirometer

- 5.** Which of the following is an accumulation and release centre of neurohormones? [1]
 - (a) Posterior pituitary lobe
 - (b) Anterior pituitary lobe
 - (c) Hypothalamus
 - (d) Anterior pituitary lobe

- 6.** What is the importance of pneumatic bones and air sacs in Aves? [2]

- 7.** What is the organ of locomotion in motile bacteria? Which is the longest portion of this organ? [2]

- 8.** How does the diaphragm help in inspiration? [2]

- 9.** What is an electrocardiogram? Name the instrument used to measure an electrocardiogram. State the significance of the electrocardiogram [3]

10. Explain the renin-angiotensin mechanism

Or

[3]

Explain how the glomerular filtration rate is maintained by the kidneys?

11. Describe the quiescent stage of the cell cycle

[3]

12. Represent diagrammatically the exchange of gases at the alveolar level and the tissue level.

Or

[5]

Oxygen binds to haemoglobin at the lung surface and dissociates at the tissues. Justify.

13. What is uraemia? Name and describe the process used to remove waste substances from individuals suffering from uraemia.

Or

[5]

Differentiate between mitosis and meiosis

14. State the steps involved in respiration.

Or

[5]

Write five important characteristic features of phylum Porifera.