

**Nagaland  
Class XI  
Biology  
Sample Paper-1**

**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.**

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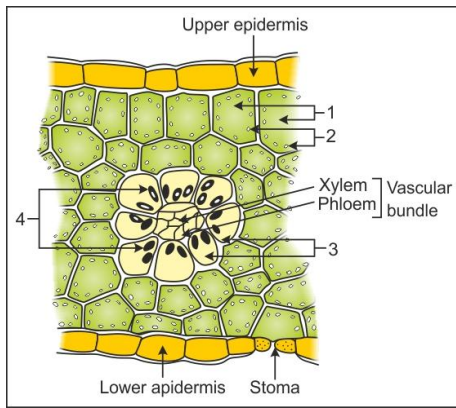
**PART - A**

1. Pinus differs from mango in having [1]
  - (a) Tree habit
  - (b) Green leaves
  - (c) Ovules not enclosed in an ovary
  - (d) Wood
  
2. New banana plants develop from [1]
  - (a) Rhizome
  - (b) Sucker
  - (c) Stolon
  - (d) Seed
  
3. During the process of respiration, the movement of CO<sub>2</sub> and O<sub>2</sub> out and inside the cell is achieved by [1]
  - (a) Active transport
  - (b) Facilitated diffusion
  - (c) Independent diffusion
  - (d) Both active and facilitated diffusion

4. Jan Ingenhousz determined the importance of which factor for photosynthesis? [1]  
(a) Light  
(b) Water  
(c) Air  
(d) Chlorophyll
5. What will be the effect on phytochrome in a plant subjected to continuous red light? [1]  
(a) Level of phytochrome decreases  
(b) Phytochrome is destroyed  
(c) Phytochrome synthesis increases  
(d) Destruction and synthesis of phytochrome remain in equilibrium
6. Why is a leaf of silk cotton called palmately compound? [2]
7. Describe the structure and functions of the tracheary elements. [2]
8. Name two heterosporous ferns. Why are they called so? [2]
9. Name the type of fertilisation which is unique to angiosperms. Describe it [3]
10. Draw a labelled diagram of chloroplast.
- Or** [3]
- What is a photosystem? Which is the pigment which acts as a reaction centre?
11. What are the factors affecting the rate of diffusion? [3]
12. The respiratory pathway is any amphibolic pathway. Justify.
- Or** [5]
- Give the schematic representation of the pathway for anaerobic respiration.
13. Explain why?  
(a) Exogenous application of auxin fails to enhance the growth of intact plants.  
(b) Vitamins are not considered as plant growth hormones.  
(c) It is appropriate to call a short-day plant a long-night plant.  
(d) Some plants, belonging to halophytes and growing in marshy lands, face great difficulty in germination.  
(e) Gibberellins do not enhance the growth of isolated plant parts.

**Or** [5]

A portion of the cross-section of leaf is shown in the diagram. Answer the following:



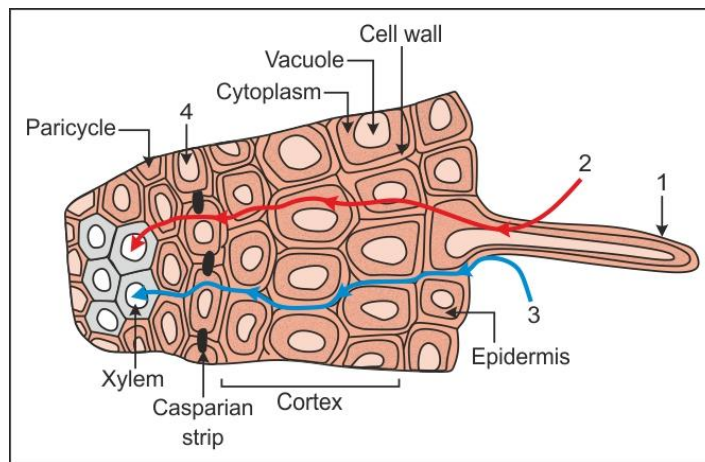
- (a) Label 1 to 4.
- (b) What kind of anatomy is shown in the diagram?
- (c) Write the structure and functions of 2 and 4.

**14.** What are the steps involved in the formation of a root nodule?

**Or**

[5]

A portion of the transverse section of root is shown in the diagram. Label 1 to 4 and also write the function of parts 1 and 4. Briefly explain the pathways 2 and 3.



**PART – B**

1. A special character of coelenterates is [1]
  - (a) Polymorphism
  - (b) Nematocysts
  - (c) Flame cells
  - (d) Hermaphroditism
  
2. Histamine-secreting cells are found in [1]
  - (a) Connective Tissue
  - (b) Lungs
  - (c) Muscular Tissue
  - (d) Nervous Tissue
  
3. Which one of the following hydrolyses internal phosphodiester bonds in a polynucleotide chain? [1]
  - (a) Lipase
  - (b) Exonuclease
  - (c) Endonuclease
  - (d) Protease
  
4. Alveoli become enlarged and damaged with reduced surface area in heavy smokers. The condition is called [1]
  - (a) Silicosis
  - (b) Emphysema
  - (c) Asthma
  - (d) Bronchitis
  
5. Coronary heart disease is due to [1]
  - (a) *Streptococci* bacteria
  - (b) Inflammation of pericardium
  - (c) Weakening of the heart valves
  - (d) Insufficient blood supply to the heart muscles
  
6. Which stage of cell division will you select to study the morphology of chromosomes and why? [2]
  
7. What is meant by haemocoel? Name the phylum which shows this feature. [2]
  
8. What is the site of fat digestion in humans? Name the enzyme which digests fats. Mention the end-product of fat digestion. [2]
  
9. What is the significance of meiosis? [3]

**10.** Describe three disorders of the skeleton and joints

**Or** [3]

What is cretinism? Give any two causes of it.

**11.** Enumerate three points to show the interaction of cockroach with mankind [3]

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

**Or** [5]

Write important characteristic features of phylum Porifera

**13.** Rutuja has a belief that the lub-dub sound produced by the heart is due to the forward and backward movements of the heart in the thoracic cavity.

Rutuja approaches her father to solve her doubts. Her father who is a doctor explains to her the human circulatory system and the cardiac cycle.

- Name the two chambers of the heart which pump blood.
- Name the valves present between the atria and ventricles.
- When are the lub and dub sounds present?
- What values do you learn here?

**Or** [5]

Explain the structure of the myofibril.

**14.** Describe the conduction of a nerve impulse through an axon.

**Or** [5]

Describe the formation of haploid spores in fungi.