

## MSc Sem.-2 Examination

407

Life Science

May-2025

Time : 2-30 Hours]

[Max. Marks : 70

**Instructions:** All questions in Sections I & II carry equal marks

Illustrate your answers with neat diagrams wherever necessary.

**Question 1** Write the following

- (i) Explain each type of plastid in detail. [07]
- (ii) Write a short note on structure, composition and types of plasmodesmata. [07]

OR

- (i) Write a short note on structure, composition and types of plant cell wall. [07]
- (ii) Write a short note on cpDNA and its packaging and role. [07]

**Question 2** Write the following

- (i) Write a short note on mode of action and role of auxin hormone. [07]
- (ii) Write a short note on the phases of plant growth. [07]

OR

- (i) What are the various applications of jasmonic acid and salicylic acid. [07]
- (ii) Enlist and explain various roles of gibberellic acid in plant science. [07]

**Question 3** Write the following

- (i) Write a short note on nitrogen fixation in plants. [07]
- (ii) Explain objectives of plant breeding. [07]

OR

- (i) Write a short note on plant genetic resources and their conservation methods. [07]
- (ii) Explain pureline cultivars and hybrid cultivars in detail. [07]

**Question 4** Write the following

- (i) Write a short note on the types of ecological succession. [07]
- (ii) Write a short note on the carbon cycle in the ecosystem. [07]

OR

- (i) Write a short note on the types of ecological pyramids. [07]
- (ii) Explain various characteristics of population. [07]

(P.T.O)

**Question 5 Attempt any seven out of twelve****[14]**

- (i) Explain plant growth curve.
  - (ii) What are various role of polyamines in plants?
  - (iii) What are various types of plant stress? give examples.
  - (iv) How does a plant use a vacuole to produce large cells cheaply?
  - (v) What are the different types of pits? Explain each.
  - (vi) Define: Growth and Development.
  - (vii) Write the chemical process of photosynthesis and explain.
  - (viii) What is cytoplasmic inheritance? Explain with an example.
  - (ix) What are different types of natural ecosystem.
  - (x) Explain mortality and natality.
  - (xi) What is plant tissue culture and explain its types.
  - (xii) Explain cultivar development procedure by PGR.
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