



**MJ-517**

**M.Sc. (Botany)**

**2nd Semester Examination, Jan.-June, 2022**

**Paper - III**

**Plant Physiology**

***Time : Three Hours]***

***[Maximum Marks : 80***

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**Note : Answer from all the Units and Question Number 1 is compulsory. All questions carry equal marks.**

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**1. Write short notes on the following :**

- (a) Phloem loading and unloading**
- (b) Properties of enzymes**
- (c) Salinity stress**
- (d) Role of cyclic nucleotides**

( 2 )

**Unit-I**

2. Explain active and passive solute transports.

**OR**

Write short notes on any **two** of the following :

- (a) Active mechanism of water absorption
- (b) Membrane transport
- (c) Role of osmosis in water transport

**Unit-II**

3. Explain the following :

- (a) Specific signal mechanism
- (b) Phospholipids signaling

**OR**

Write short notes on any **two** of the following :

- (a) Protein kinases and phosphatases
- (b) Receptor
- (c) Two-component sensor regulator system in Bacteria

**Unit-III**

4. What do you mean by Stress Physiology?  
Describe mechanism of abiotic and biotic tolerance.

**OR**

( 3 )

Write short notes on any **two** of the following :

- (a) Drought resistance
- (b) Metal toxicity
- (c) Freezing and heat stress

**Unit-IV**

5. Write an illustrated account on phytochromes and cryptochromes.

**OR**

Write short notes on any **two** of the following :

- (a) Isozymes
- (b) Michaelis-Menten equation
- (c) Phytochrome localization in cell and tissue of plants