



**BBB-003-1144002**

Seat No. \_\_\_\_\_

**M. Sc. (CBCS) (Sem. IV) Examination**

**July - 2021**

**Botany : BOT-420**

*(Plant Physiology & Molecular Biology)*

*(New Course)*

**Faculty Code : 003**

**Subject Code : 1144002**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

**Instruction :** All questions are to be attended as per information.  
Attempt any five questions.

- 1** Answer the following : **14**
- (a) What are the internal factors affecting the rate of transpiration?
  - (b) Describe the factors that affect mineral salt absorption.
  - (c) Define Osmotic Potential and Pressure Potential.
  - (d) Define photomorphogenesis.
  - (e) Give significance of abscission.
  - (f) Differentiate between PS I and PS II.
  - (g) What is Photolysis?
- 2** Answer the following : **14**
- (a) Name some hormone receptors.
  - (b) Give physiological role of ethylene.
  - (c) Define viability.
  - (d) Give function of SEP1, SEP2, SEP3 and SEP4 in flowering.
  - (e) List three major reactions occurring in calvin cycle.
  - (f) Mention the functions or significance of accessory pigments?
  - (g) Draw the schematic representation of C4 Cycle.
- 3** Answer the following : **14**
- (a) Explain factors responsible for flower initiation in detail.
  - (b) Explain Fixed sample size germination test.

- 4 Answer the following : 14  
(a) Explain deficiency symptoms of macro nutrients in plants.  
(b) Give difference between passive and active mechanism of mineral absorption.
- 5 Answer the following : 14  
(a) Write the short note on CAM pathway.  
(b) Describe the Photorespiration process.
- 6 Answer the following : 14  
(a) Explain physiological effect of auxin and cytokinin during growth of plants.  
(b) Explain bioassay used for estimation of auxin from plants.
- 7 Answer the following : 14  
(a) Explain how DNA methylation regulates vernalization process in plants.  
(b) Explain physiological phenomenon regulating senescence process in plants.
- 8 Answer the following : 14  
(a) Explain mechanism of salt resistance in plants.  
(b) Explain physiological role of micro nutrients in plants.
- 9 Answer the following : 14  
(a) Write the Z scheme of the light reaction.  
(b) Give differences between C3 and C4 cycle.
- 10 Answer the following : 14  
(a) Explain physiological function of abscisic acid in detail.  
(b) Explain function of polyamines in plant growth and development.
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