



K23P 1370

Reg. No. : .....

Name : .....

**III Semester M.Sc. Degree (CBSS – Reg./Supple./Imp.)**  
**Examination, October 2023**  
**(2020 Admission Onwards)**  
**BOTANY**  
**BOT3C10 : Plant Physiology**

Time : 3 Hours

Total Marks : 60

**Instruction :** Draw diagrams *wherever* necessary.

**SECTION – A**

1. a) Describe ultrastructure of chloroplast and light reaction.

OR

b) Explain dark reaction and chemiosmotic mechanism of ATP formation.

2. a) Give a detailed account of glycolysis and citric acid cycle.

OR

b) Write an account on nitrogen cycle and its importance.

**(2×8=16)**

**SECTION – B**

Answer **any two**.

3. a) Mention different types of abiotic stress to plants.

b) Explain plant response to saline stress.

c) Write about water and saline stress resistance and genes involved in plants.

**(1+2+3)**

P.T.O.



4. a) Write about phytohormones.  
b) Explain the role of phytohormones in growth.  
c) Explain the role of phytohormones in ripening and senescence. (1+2+3)
5. a) Write a note on mobile and immobile elements.  
b) Explain symport and antiport.  
c) Explain diffusion, facilitated diffusion and membrane channels. (1+2+3)
- (2×6=12)

SECTION – C

Answer **any six**.

6. Write about agricultural productivity and water potential.  
7. Explain the process of seed maturation.  
8. Write about different types of soil.  
9. Explain stomatal transpiration and regulation of transpiration.  
10. Write an account on types of fertilizers in supplementing essential elements.  
11. Explain physiology of flowering.  
12. Write about respiration in germinating seeds.  
13. What are CAM plants ? How is it different from other plants ? (6×3=18)

SECTION – D

Answer **any seven**.

14. Explain water absorption in halophytes.  
15. Write a note on fruit development.



16. Differentiate C3 and C4 plants.
17. Write about Growth indices of plants.
18. Explain in vitro culture of plants.
19. Write a note on conditions for germination of seeds.
20. Explain Gibbs free energy concept.
21. What are aquaporins ? Mention the significance.
22. Write about the physiological adaptations of desert plants to minimize transpiration.
23. Explain photorespiration and its significance. (7×2=14)

