K22P 1370

Reg. No. : .....

Name : .....

III Semester M.Sc. Degree (CBSS – Reg./Sup./Imp.) Examination, October 2022
(2019 Admission Onwards)
BOTANY
BOT3C10 : Plant Physiology

Time : 3 Hours Max. Marks : 60

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

SECTION – A

1. a) Explain electron transport system and chemi-osmotic mechanism of ATP formation.

   OR

   b) Explain phytochrome and physiology of flowering.

2. a) Explain different types of stress and physiology of stress response in plants.

   OR

   b) Give a comparative account on photosynthesis in C3, C4 and CAM plants. **(2×8=16)**

SECTION – B

Answer **any two**.

3. a) What are photoreceptors ?
   b) Explain the role of photoreceptors in energy trapping and energy transformation.
   c) Explain Photo System I and Photo System II with suitable diagram. **(1+2+3)**

4. a) What are aquaporins ?
   b) Explain the role of calmodulin.
   c) With suitable diagram explain the ultra structure of K+ channel. **(1+2+3)**

5. a) What is capillary water ?
   b) Briefly explain soil-plant-atmosphere continuum.
   c) Explain the role of turgor pressure and transpiration pull in plants. **(1+2+3)**

(2×6=12)

P.T.O.

SECTION – C

Answer **any six**.

6. Explain sulfur metabolism.
7. Explain the physiological changes during seed germination.
8. Briefly explain photoperiodism.
9. Explain the physiological changes during seed maturation.
10. Briefly explain ion transport across the membranes.
11. What is photorespiration ? Briefly explain its significance.
12. Give an account on the physico chemical properties of water.
13. Briefly explain Gibbs free energy concept. **(6×3=18)**

SECTION – D

Answer **any seven**.

14. Cyanide resistant respiration
15. CAM pathway
16. Field capacity
17. Osmosis
18. Water absorption by halophytes
19. Facilitated diffusion
20. Cycling of nutrients
21. Stress resistance
22. Phytochrome
23. Senescence. **(7×2=14)**