

November 2025
M.Sc.
Third Semester
CORE – 10
BOTANY
Course Code: MBOC 3.21
(Plant Physiology)

Total Mark: 70
Time: 3 hours

Pass Mark: 28

Answer five questions, taking one from each unit.

UNIT-I

1. Discuss how the properties of water influence water movement in plants. Explain the concept of soil-plant-atmosphere continuum. 8+6=14
2. Discuss the consequences of water stress and mechanisms of plant response to water stress. Comment on the potential role of resurrection plants in the event of drought stress. 10+4=14

UNIT-II

3. Describe the organisation of light absorbing pigment systems. Discuss the causes and consequences of photoinhibition. 8+6=14
4. Discuss the processes of non-photochemical quenching and repair mechanism of D1 protein of PSII. 9+5=14

UNIT-III

5. Explain the process of mitochondrial electron transport and oxidative phosphorylation. 14
6. Discuss the process of biological nitrogen fixation. Explain the GS/GOGAT pathway for nitrogen assimilation in plants. 8+6=14

UNIT-IV

7. List out the components required for gibberellin signalling. Discuss the signalling pathways of gibberellin. Illustrate your answer with the help of a flow chart. $5+6+3=14$
8. From which part of the plant is cytokinin synthesised? Mention at least three physiological effects of cytokinin. Discuss the signalling pathways of cytokinin. Illustrate your answer with the help of a flow chart. $1+3+7+3=14$

UNIT-V

9. What is dormancy? Illustrate the different types of dormancy. $2+12=14$
10. Discuss senescence and its types. Support your answer with suitable diagrams. $3+8+3=14$
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