

2021
B.A./B.Sc.
Fifth Semester
CORE – 12
BOTANY
Course Code: BOC 5.21
(Plant Physiology)

Total Mark: 70

Pass Mark: 28

Time: 3 hours

Answer five questions, taking one from each unit.

UNIT-I

1. Briefly explain the pathways of water movement. Explain how ascent of sap takes place in plants. 7+7=14
2. Briefly explain the factors influencing transpiration. Describe the mechanism of stomatal movement. 7+7=14

UNIT-II

3. What are the criteria for essentiality of plant nutrients? What are beneficial elements? Explain the deficiency symptoms of two macronutrients and two micronutrients. 3+3+8=14
4. What are chelating agents? Explain the roles of any four macronutrients 2+12=14

UNIT-III

5. Why is soil considered as a nutrient reservoir? Differentiate between channel proteins and carrier proteins. 7+7=14
6. Differentiate between phloem loading and phloem unloading. Explain the mechanism of translocation in the phloem as per the pressure flow model. 4+10=14

UNIT-IV

7. In the 'Split pea stem curvature test' for bioassay of Auxins, explain why and how the curvature of the stem increases with increase in the concentration of auxins. Give four physiological roles of auxins. 10+4=14
8. Explain the bioassay of gibberellins or ethylene. Give four physiological roles of cytokinins. 10+4=14

UNIT-V

9. Explain in brief the photo-reversibility of Phytochromes. '*Light is not required for Short Day Plants to flower.*' Give reasons. 7+7=14
10. Write notes on the following: 7×2=14
- (a) Flowering stimulus and Florigin concept
 - (b) Vernalization and Seed dormancy
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