



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 5th Semester Examination, 2021-22

BOTACOR12T-BOTANY (CC12)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

1. Answer **all** questions briefly from the following: 1×6 = 6
- What is total water potential in plant?
 - Name one natural antitranspirant.
 - What causes the alkalization of guard cell cytosol during ABA signalling?
 - Write the function of companion cell in phloem transport in plants.
 - Define critical day length.
 - Name the plant hormone which act against pest. It is synthesized in which plant organ?
2. Answer any **eight** questions from the following: 3×8 = 24
- The cell sap of roots of halophytic plant has normally higher osmotic pressure than that of the cell sap of mesophyte plants — Explain with reasons.
 - Differentiate between diffusion pressure deficit and water potential.
 - Discuss the role of Fe as essential element and mention its deficiency.
 - Explain the mechanism of ascent of sap in the light of modern concept.
 - What are the different types of membrane transporters?
 - Enumerate the physiological role of auxin.
 - How can plants be classified based on their photoperiodic response?
 - Explain how loading of sugar takes place from SE.CC complex in green plants.
 - Distinguish between phytochrome and cryptochrome.
 - Discuss the role of gibberellin on the production of α -amylase by aleurone layer in the embryo.
 - What are natural and synthetic plant growth regulators? Give examples.
 - Write a short note on the causes of seed dormancy.

3. Answer any *two* questions from the following: 5×2 = 10
- (a) Give the chemical structure of kinetin. Discuss the role of cytokinin in cell division and senescence. 1+4
- (b) What is G-protein? Mention its role in signal transduction pathway. 2+3
- (c) Describe the role of sucrose-H⁺ transporter in phloem loading. 5
- (d) Discuss briefly Ca⁺ ATPase pump in absorption of ions by roots. State the importance of Donnan equilibrium concept in passive absorption of ions. 5

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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