



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 5th Semester Examination, 2022-23

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
 - (a) Differentiate between primary and secondary dormancy.
 - (b) Name one chelating agent.
 - (c) What will be the osmotic potential in a fully turgid cell?
 - (d) What are phototropins?
 - (e) Draw the structure of a synthetic auxin.
 - (f) What are aquaporins?

2. Answer any **eight** questions from the following: 3×8 = 24
 - (a) Why is Potassium considered as essential element, although it is not found in any of the cell constituents? 3
 - (b) Explain the Mass flow hypothesis of phloem transport. 3
 - (c) Pfr is the physiologically active form of phytochrome — Why? 3
 - (d) Mention the triple response of ethylene. What is Richmond Lang effect? 1½ + 1½
 - (e) Discuss the different types of channels found in plasma membrane. 3
 - (f) Describe the role of Ca²⁺ and Cl⁻ in the opening and closing of stomata. 1½ + 1½
 - (g) Discuss the role of Brassinosteroids in plant growth and development. 3
 - (h) What are hydroponics? Discuss the advantages of hydroponics. 1+2
 - (i) Write a short note on phytochrome mediated low energy response and high irradiance response in plants. 1½ + 1½
 - (j) Distinguish between innate and induced dormancy. Name one phytohormone associated with seed germination. 2+1
 - (k) Explain the role of Gibberellic Acid in bolting and flowering. 3
 - (l) What will happen when a cell is placed in (i) Hypertonic solution (ii) Hypotonic solution? Name the phenomenon associated with it. 1+1+1

3. Answer any **two** questions from the following: 5×2 = 10
 - (a) Define secondary active transport. Differentiate between channel proteins and carrier proteins. 2+3
 - (b) Write the physiological function of phototropins in plants. 5
 - (c) Write a short note on cryptochrome. 5
 - (d) Briefly discuss the transpiration pull theory of water transportation. 5

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