



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 5th Semester Examination, 2021

CC12-BOTANY

PLANT PHYSIOLOGY

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks

GROUP-A

1. Answer any **five** questions from the following: 1×5 = 5
- (a) Name one endogenous plant hormone.
 - (b) What is Diffusion Pressure Deficit (DPD)?
 - (c) Which hormone is responsible for photoperiodism?
 - (d) What do you mean by Vernalization?
 - (e) What are Brassinosteroids?
 - (f) Name two enzymes where Zinc (Zn) acts as an activator.
 - (g) What are aquaporins?
 - (h) What is meant by physiologically dry soil?

GROUP-B

2. Answer any **three** questions from the following: 5×3 = 15
- (a) Discuss critically the mechanism of stomatal movement emphasizing the role of K^+ ions. 5
 - (b) Evaluate the importance of Nitrogen (N) in plant nutrition. 5
 - (c) What do you mean by apoplastic pathway of water movement? Discuss the factors that affect the rate of water absorption in plants. 2+3
 - (d) Discuss the different physical theories in relation with ascent of sap. 5
 - (e) Write short notes on: 2 $\frac{1}{2}$ × 2 = 5
 - (i) Manganese (Mn) as a micronutrient in plant
 - (ii) Hydathods.

GROUP-C

3. Answer any *two* questions from the following: 10×2 = 20
- (a) Describe the mechanism of phloem loading. Differentiate between apoplastic and symplastic loading. What are P-proteins? 5+3+2
- (b) Differentiate between Long Day Plants (LDP) and Short Day Plants (SDP). What are the different responses of plants to phytochrome? 3+7
- (c) What is facilitated diffusion? What is meant by active transport of ions? State the role of ABC transporters in ionic transport. 2+2+6
- (d) Write short notes on: 2 $\frac{1}{2}$ ×4=10
- (i) Criteria for essentiality of minerals
 - (ii) Role of ATPase as ion pump
 - (iii) Donnan Equilibrium
 - (iv) Bioassay of Auxin.

—×—