

2022

BOTANY — HONOURS

Paper : CC-13

Full Marks : 50

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer **any five** questions : 2×5
- (a) What are aquaporins?
 - (b) What is critical concentration of a nutrient?
 - (c) Why all plant growth regulators are not termed as phytohormones?
 - (d) What do you mean by chelating agents?
 - (e) What is 'devernalisation'?
 - (f) Write the scientific name of one Short Day Plant (SDP) and one Long Day Plant (LDP).
 - (g) What is triple response of Ethylene?
 - (h) Define 'Biorhythm'.
2. Answer **any two** questions :
- (a) Mention physiological roles of calcium and phosphorus in plants. 2½+2½
 - (b) Write down the process of IAA biosynthesis from Tryptophan with the help of chemical structure and flowchart. 5
 - (c) Discuss phloem translocation with reference to 'Pressure flow hypothesis'. 5
3. Answer **any three** questions :
- (a) Name two naturally occurring cytokinins. Give the chemical structure of kinetin. Discuss the role of cytokinin in regulation of cell division in plants and root-shoot initiation in callus tissue. 2+2+6
 - (b) What do you mean by photoperiodic induction? What is the site of perception of the photoperiodic stimulus? Discuss in brief the role of GA in flowering. What is 'Vernalisation'? 2+2+4+2
 - (c) Discuss the role of potassium ions and abscisic acid in the opening and closing of stomata. What is 'antitranspirant'? 4+4+2
 - (d) Write down the role of polyamines as growth regulator. Discuss in brief the role of Ethylene in fruit ripening. Write about the biological significance of Senescence. 4+3+3
 - (e) Give a brief account of soil-plant-atmosphere continuum concept. What is meant by water potential? Mention its different components. 5+2+3
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