

M.Sc. Part—II (Semester—III) (C.B.C.S.) Examination

BOTANY

Paper—XI (Elective)

(Advanced Plant Physiology and Biochemistry—I)

Time : Three Hours]

[Maximum Marks : 80

Note :—(1) All questions are compulsory and carry equal marks.

(2) Draw neat and well labelled diagrams wherever necessary.

1. What is aquaporines ? Explain in detail structure and functions of aquaporines. 16

OR

What is mineral toxicity ? Explain in detail plant response to Cadmium and Mercury toxicity.

16

2. What are nastic movements ? Describe mechanism of Seismonasty. 16

OR

Describe in detail phytochemical and biochemical properties of phytochromes and cryptochromes.

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3. Write on :—

(a) Transport across chloroplast membrane. 5

(b) Functions of thylakoid membrane. 5

(c) Biosynthesis of carotene. 6

OR

(d) Transport across mitochondrial membrane. 5

(e) Functions of inner mitochondrial membrane. 5

(f) Nuclear proteins for photosynthesis. 6

4. Write on :—
- (g) Aim of artificial photosynthesis. 5
 - (h) Difference between primary and secondary metabolites. 5
 - (i) Biosynthesis of stilbenes. 6

OR

- (j) National hydrogen programme. 5
- (k) Applications of terpens. 5
- (l) Biosynthesis of Amyl-pyrones. 6

5. Write on :—
- (m) Principle of PMR spectroscopy. 5
 - (n) Principle of UV-visible spectroscopy. 5
 - (o) Principle and applications of Fluorescence. 6

OR

- (p) Principle of flame photometry. 5
- (q) Principle of ion exchange chromatography. 5
- (r) Principle and applications of paper chromatography. 6