

D 6823

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Name.....

Reg. No.....

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, DECEMBER 2016

(CUCSS)

Botany

BO 03 CT 09—PLANT PHYSIOLOGY, METABOLISM AND BIOCHEMISTRY

Time : Three Hours

Maximum : 36 Weightage

I. Answer all the *fourteen* questions very briefly :

- 1 What are aquaporins ?
- 2 What is photolysis of water ?
- 3 How the cohesive and adhesive properties of water helps in ascent of sap in plants ?
- 4 What is meant by symport ?
- 5 What are isoenzymes ?
- 6 What is meant by phloem loading ?
- 7 What are antiauxins ?
- 8 What is leghemoglobin ?
- 9 What is the function of antifreeze proteins ?
- 10 What is photomorphogenesis ?
- 11 Define a tetrasaccharide. Give one example.
- 12 What are LHCs ?
- 13 Comment on phytoalexins.
- 14 What is meant by fermentation ?

(14 × 1 = 14 weightage)

II. Answer any *seven* questions. Each question carries 2 weightage :

- 15 Differentiate photophosphorylation and oxidative phosphorylation ?
- 16 Write an account of alkaloids.
- 17 Describe the physiologically important properties of water ?
- 18 Evaluate the significance of glyoxylate cycle.
- 19 Explain the Beta oxidation of fatty acids.
- 20 Comment on the physiological roles of Gibberellins ?

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- 21 Explain the β -pleated structure of Proteins.
 - 22 What are the different strategies adopted by plants for tolerating heat stress ?
 - 23 What is transamination ? Describe the transamination reactions involved in the synthesis of aminoacids.
 - 24 Explain the structure of a nucleotide. How different nucleotides are linked together ?
(7 \times 2 = 14 weightage)

III. Answer any *two* questions in 300 words each :

- 25 Describe the C_2 Cycle (Glycolate pathway). Comment on the significance of this pathway ?
- 26 Explain the physiology of symbiotic nitrogen fixation in plants.
- 27 Give the classification of proteins based on the structure, function and molecular organization and solubility.
- 28 Write a brief account on the secondary metabolites in plants and their physiological role ?
(2 \times 4 = 8 weightage)