

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 x 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** ?

Turn over

- 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 x 2 = 14 weightage)

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

- 25 Describe the C₂ 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 x 4 = 8 weightage)