

D 70914

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Name.....

Reg. No.....

**THIRD SEMESTER M.Sc. DEGREE (REGULAR) EXAMINATION
NOVEMBER 2019**

Botany

BO 03CT 09—PLANT PHYSIOLOGY, METABOLISM AND BIOCHEMISTRY

Time : Three Hours

Maximum : 36 Weightage

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

- 1 What are Nif-genes ?
- 2 What are isoenzymes ?
- 3 What is a co-enzyme ? Give two examples.
- 4 Differentiate apoplast and symplast transport.
- 5 Differentiate PSI and PSII.
- 6 Mention the role of hormonal regulation in stomatal closure.
- 7 What is the function of leghemoglobin ?
- 8 What is photophosphorylation ?
- 9 What is meant by a metabolism ?
- 10 What is apical dominance ?
- 11 What are antitranspirants ?
- 12 Name the bonding between two amino acids in a protein ? How is it formed ?
- 13 What are growth inhibiting hormones ? Give two examples.
- 14 What are antiauxins ?

(14 × 1 = 14 weightage)

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

- 15 Explain the GDH, GS/GOGAT pathway of aminoacid biosynthesis.
- 16 Describe the pathway of gluconeogenesis.
- 17 Write an account on SPAC.
- 18 Describe the primary and secondary structure of proteins.

Turn over

- 19 Explain the role of phytochromes in plants.
- 20 Describe the anaplerotic reactions of citric acid cycle.
- 21 Explain the signal transduction during the colonization of symbiotic nitrogen fixing bacteria.
- 22 Describe the chemistry of cytokinins. What developmental processes in plants are influenced by cytokinins ?
- 23 Write an account on phloem loading and unloading.
- 24 Describe the general structure and characters of an amino acid.

(7 × 2 = 14 weightage)

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

- 25 Give an account on the characteristics of Polysaccharides with special reference to starch and cellulose.
- 26 Compare C₃ and C₄CO₂ fixation process in plants in terms of advantage to the plant and energetics.
- 27 What are the various physiological adaptations of the plants which enable them to tolerate drought, cold and salinity stress ?
- 28 Write an account on the different methods of enzyme regulation. What is the need of regulating enzyme activity ?

(2 × 4 = 8 weightage)