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M. Sc. (Final) Examination, 2016

BOTANY

Paper-II

(Plant Physiology & Metabolism)

Time : Three Hours

Maximum Marks : 100

PART - A (खण्ड-अ) [Marks : 20]

Answer all questions (50 words each).

All questions carry equal marks.

सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न का उत्तर पचास शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

PART - B (खण्ड-ब) [Marks : 50]

Answer *five* questions (250 words each).

Selecting *one* from each unit. All questions carry equal marks.

प्रत्येक इकाई से एक-एक प्रश्न चुनते हुए, कुल पाँच प्रश्न कीजिए।

प्रत्येक प्रश्न का उत्तर 250 शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

PART - C (खण्ड-स) [Marks : 30]

Answer any *two* questions (300 words each).

All questions carry equal marks.

कोई दो प्रश्न कीजिए। प्रत्येक प्रश्न का उत्तर 300 शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

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P.T.O.

PART - A

UNIT-I

1. What are allosteric enzymes ?
2. Define 'entropy'.

UNIT-II

3. Define 'calmodulin'.
4. What is photophosphorylation ?

UNIT-III

5. What is leghemoglobin ?

6. Write name of allosteric enzymes of glycolytic pathway.

UNIT-IV

7. Define 'cryptochrome'.

8. What are brassinosteroids ?

UNIT-V

9. What do you understand by 'critical day length' ?

10. Define 'Reactive oxygen species (ROS)'.

PART - B

UNIT-I

1. Describe Michaelis Menten equation and its singificance.

OR

2. Discuss in detail mechanism of active transport of molecules across the membrane.

UNIT-II

3. What is signal transduction ? Discuss G-protein mediated cascade in detail.

OR

4. Differentiate between C_3 , C_4 and CAM pathway.

UNIT-III

5. Discuss allosteric regulation of glycolysis in detail.

OR

6. Describe mechanism of biological nitrogen fixation in detail.

UNIT-IV

7. What are phytochromes ? Discuss how these photoreceptors control photomorphogenesis in plants.

OR

8. Discuss physiological of abscisic acid in detail.

UNIT-V

9. Discuss molecular mechanism of vernalization in plants.

OR

10. Describe in detail various plant responses to drought

stress.

PART - C

UNIT - I

1. Describe in detail three laws of thermodynamics.

UNIT - II

2. Describe mechanism of ATP biosynthesis in chloroplasts.

UNIT - III

3. Discuss in detail β -oxidation of fatty acids.

UNIT - IV

4. Discuss physiological functions of ethylene in detail.

UNIT - V

5. What do you understand by abiotic stress ? Discuss role of heat shock proteins in stress tolerance in plants.