

5/H-62 (v) (Syllabus-2015)

2017

(October)

BOTANY

(Honours)

(Plant Physiology and Biochemistry)

(BOTH-501)

Marks : 56

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer Question No. 1 which is compulsory and other **four**, selecting **one** from each Section

1. Write short notes on the following : 4×4=16

- (a) Micronutrients and macronutrients
- (b) Role of cyclic electron transport in ATP synthesis
- (c) Role of day length in photoperiodism
- (d) Chiral centre and its significance

(Turn Over)

(2)

SECTION—I

2. Write short notes on the following : 5+5=10
- (a) Criteria of essentiality of mineral elements
 - (b) Water potential and its importance in maintaining cellular turgor
3. (a) Differentiate between symport and antiport mechanisms of mineral transport. 5
- (b) Describe the symptoms of deficiency of phosphorous and magnesium in plants. $2\frac{1}{2}+2\frac{1}{2}=5$

SECTION—II

4. Write a detailed account on the process of CO_2 fixation in C_3 plants. How does CO_2 fixation in C_4 plants differ from that in C_3 plants? 6+4=10
5. With the help of suitable reactions, describe the mechanism of biological nitrogen fixation. 10

SECTION—III

6. What is seed dormancy? Write a detailed account on the mechanisms involved in breakage of dormancy in seeds. 3+7=10

8D/275

(Continued)

(3)

7. Write short notes on the following : 5+5=10
- (a) Physiological effects of auxins
 - (b) Physiology of senescence

SECTION—IV

8. (a) With the help of suitable examples, illustrate the EC-based nomenclature of enzymes according to IUBMB. 6
- (b) Discuss the significance of the second law of thermodynamics in biological systems. 4
9. Describe in detail the hierarchy in protein structure. 10

8D—1200/275

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