

**TDC Odd Semester Exam., 2020
held in July, 2021**

BOTANY

(Honours)

(3rd Semester)

Course No. : BOTH-302

(**Plant Physiology and Biochemistry—II**)

Full Marks : 35

Pass Marks : 12

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. (a) Name one symbiotic association that is able to fix atmospheric nitrogen. 1
- (b) What is nif gene? 1
- (c) Write in brief about mechanism of nitrogen fixation by leguminous plants. 5

2. (a) Name one nitrifying bacteria. 1
- (b) What are the sources of ammonium ion in plants? 2
- (c) Describe briefly nitrate and ammonium assimilation in plants. 4

UNIT—II

3. (a) What is seed dormancy? 2
- (b) What are the methods of breaking seed dormancy? 3
- (c) What is secondary dormancy? 2
4. (a) What is photoperiodism? 1
- (b) Describe briefly the role of auxin in plants. 2
- (c) State the mechanism of auxin action. 4

UNIT—III

5. (a) Define free energy. 1
- (b) State briefly the physicochemical properties of enzymes. 3
- (c) Write a note on redox potential. 3

(3)

6. (a) Define enthalpy. 1
(b) Write the differences between coenzymes and cofactors. 2
(c) State briefly the factors affecting enzyme activity. 4

UNIT—IV

7. (a) Describe briefly the tertiary structure of proteins. 2
(b) What is protein targeting? 1
(c) Write a note on protein biosynthesis. 4
8. (a) What is protein degradation? 2
(b) Name the initiation amino acid in prokaryotic protein synthesis. 1
(c) Describe briefly the post-translational modification of proteins. 4

UNIT—V

9. (a) What are lipids? 2
(b) Write about the importance of lipid in formation of plasma membrane. 2
(c) Classify lipids with examples. 3

(4)

10. (a) Give an example of pentose sugar. 1
(b) Write the importance of polysaccharides. 2
(c) Describe briefly the biosynthesis of starch. 4
