5/BOT–301 (Th) Syllabus–2023

2025

(Nov–Dec)

FYUP : 5th Semester Examination

MAJOR

BOTANY

(Plant Biochemistry)

BOT–301

Marks : 56

Time : 3 hours

The figures in the margin indicate full marks for the questions

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

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

(a) Tertiary structure of protein

(b) Significance of second law of thermodynamics in biological system

(c) Ultrastructure of Mitochondria

(d) Role of phenolics in plants

SECTION—I

2. Classify different types of lipids on the basis of their backbone structure. 10

3. Describe in brief : 5×2=10

(a) Significance of molarity and normality

(b) Classification of amino acids based on nature of their R-group

SECTION—II

4. With the help of suitable examples, discuss the nomenclature and classification of enzymes according to IUBMB. 10

5. Discuss allosteric regulation of enzyme activity. 10

SECTION—III

6. Write on redox potential and its significance in photosynthetic ETC. 10

7. Write on mechanism of ATP production via activity of ATPase. 10

SECTION—IV

8. Differentiate between : 2½×4=10

(a) Active site and allosteric site of enzymes

(b) Reducing and non-reducing sugar

(c) Enthalpy and entropy

(d) Triterpenes and tetraterpenes

9. What is kinetics of enzyme catalysis? Using the Lineweaver-Burk plot, explain how changes in substrate concentration will affect the velocity of enzyme catalysed reactions in presence of a competitive inhibitor. 2+8=10

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