

Exam. Code : 103205
Subject Code : 1326

B.A./B.Sc. 5th Semester

BOTANY

Paper-V (Biochemistry & Biotechnology)

Time Allowed—3 Hours] [Maximum Marks—35

Note :— Attempt FIVE questions in all, selecting at least ONE question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. Explain the classification and nomenclature of enzymes. 7
2. Write short notes on :—
 - (a) Induced-fit model
 - (b) Lock and key model 3.5x2

SECTION—B

3. Explain the process of Kreb's cycle. 7
4. Write a note on :—
 - (a) Chemi-osmotic theory
 - (b) Pentose phosphate pathway. 3.5x2

SECTION—C

5. (a) Explain the mechanism of action of nitrate reductase enzyme.
- (b) Explain the schematic representation of biosynthesis of fatty acids. 3.5x2
6. What are the steps involved in the process of biological nitrogen fixation ? Enlist the names of the microorganisms and their hosts responsible for fixing atmospheric nitrogen.

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SECTION—D

7. (a) Elaborate the techniques of gene mapping.
- (b) What are cloning vectors ? Give their significance in genetic engineering. 3.5x2
8. (a) Discuss the major achievements of biotechnology in crop improvement.
- (b) Define the terms: differentiation, cellular totipotency and morphogenesis. 4+3