

Exam. Code : 103205
Subject Code : 1324

B.A./B.Sc. 5th Semester
BOTANY
Paper—V-B
(Biochemistry & Biotechnology)

Time Allowed—3 Hours] [Maximum Marks—35

Note :—There are total of **EIGHT** questions. Candidates are required to attempt **FIVE** questions, selecting at least **ONE** question from each section. The fifth question may be attempted from any section.

SECTION—A

1. Write short notes on :—
 - (a) Induced-fit model
 - (b) Lock and key model. 3+4
2. (a) What is the effect of presence and absence of an enzyme on activation energy ?
(b) Give the differences between coenzymes and cofactors with suitable examples. 3+4

SECTION—B

3. Explain the process of oxidative phosphorylation. 7
4. Write a note on :—
 - (a) F_0-F_1 ATPase.
 - (b) Regulation of ATP synthesis. 2+5

SECTION—C

5. 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. 7
6. (a) Give the structure and function of lipids.
(b) Explain the schematic representation of biosynthesis of fatty acids. 3+4

SECTION—D

7. (a) Discuss the major achievements of biotechnology in crop improvement.
(b) Differentiate between genomic and cDNA library. Give their significance. 3+4
8. Give the mechanism of *Agrobacterium tumefaciens* mediated gene transfer in plants. 7