

Exam. Code : 103205

Subject Code : 1396

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

BOTANY

(Biochemistry & Biotechnology)

Paper-V (B)

Time Allowed—3 Hours]

[Maximum Marks—35

Note : There are total of **NINE** questions. Question No. 1 will be compulsory and questions in this will be of short answer-type (3-4 lines). The remaining **EIGHT** questions have been set from equal distribution of syllabus out of which candidates are required to attempt **FOUR** questions. All questions (including Q. No. 1) have equal marks i.e. 7 marks each.

1. Define :

- (a) Isoenzymes
- (b) Unsaturated fatty acids
- (c) Nitrogenase
- (d) Restriction Enzymes
- (e) Cofactors
- (f) Gene library
- (g) Replisome.

1×7

- 2. (a) Describe classification of enzymes on the basis of reactions they catalyze.
(b) Give schematic representation of Kreb's cycle. 4+3
- 3. (a) Differentiate between aerobic respiration and fermentation.
(b) Describe ammonia assimilation. 3+4
- 4. Describe the sequence of events involved in rhizobial infection and nodule development in a legume root. 7
- 5. (a) Illustrate nomenclature, structure and role of fatty acid.
(b) Discuss Allosteric Enzymes activities with examples. 3.5+3.5
- 6. (a) Describe genetic markers.
(b) What are the pros and cons of genetically modified crops ? 4+3
- 7. (a) Explain vectors for gene delivery with special reference to agrobacterium.
(b) Define transposable elements with examples. 5+2
- 8. (a) Who discovered chemiosmotic regeneration of ATP in plants ? Explain the process in detail.
(b) Discuss tools and techniques of Recombinant DNA technology. 4+3
- 9. (a) Elaborate regulation and biosynthesis of fatty acids.
(b) Discuss cellular totipotency. 5+2