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03 BSc.

Roll No. ....

(05/16-I)

**5264**

**B. Sc. EXAMINATION**

(Sixth Semester)

**BOTANY**

First Paper

Bio-Chemistry & Plant Bio-Technology

*Time : Three Hours*

*Maximum Marks : 40*

**Note :** Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. (a) What are isoenzymes ?
- (b) Name the plant hormone that inhibit the growth of plants.
- (c) Draw the structure of steroids.
- (d) What are essential amino acids.
- (e) What are restriction enzymes ?

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- (f) What is cellular totipotency ?
- (g) What is morphogenetics ?
- (h) Name the red pigments in root nodule involved in symbiotic nitrogen fixation.

1×8=8

#### Unit I

- 2. (a) Describe the various characteristics of enzymes. 4
- (b) Describe the Michaelis-Menton constant and also explain Line Weaver Burk Plot. 4
- 3. What are auxins ? Discuss the discovery, structure, mode of action and physiological effects of cytokinins on plants. 8
- 4. Explain the following : 4×2
  - (a) Cytokinin
  - (b) Gibberrelins

- 5. (a) What are lipids ? How are they classified ? 4
- (b) Explain the  $\alpha$ -oxidation of fatty acids. 4

#### Unit II

- 6. (a) Explain symbiotic nitrogen fixation. 4
- (b) Explain the nitrogen cycle. 4
- 7. Write an illustrated account of different vectors used for gene cloning. 8
- 8. Describe the various techniques of plant invitro culture. 8
- 9. (a) Describe the various methods of sterilization. 5
- (b) Define totipotency and also mention its two significance. 3