

7. Discuss briefly the following with suitable examples : $7 \times 2 = 14$

- (a) Role of Biotechnology in pollution control
- (b) Restoration of degraded lands and Conservation of Biodiversity.

Unit IV

8. Discuss briefly the following with suitable examples : $7 \times 2 = 14$

- (a) Applications of Nano-Biotechnology in different areas
- (b) Overview of Bioinformatics Institutes and Databases.

9. Discuss briefly the following by giving suitable examples : $7 \times 2 = 14$

- (a) Importance of Biotechnology for Developing countries and IPR
- (b) World Wide web as a tool of Bioinformatics.

Roll No.

Exam Code : J-21

Subject Code—52985

M.Sc. EXAMINATION

(Batch 2020 Onwards)

(First Semester)

BIOTECHNOLOGY

BTL511

Introductory Biotechnology

Time : 3 Hours

Maximum Marks : 70

Note : Attempt any *Five* questions. Q. No. **1** is compulsory. All questions carry equal marks.

(Compulsory Question)

1. Write short notes on all of the following. Illustrate your answer with suitable examples/ drawing wherever necessary : $2 \times 7 = 14$
 - (a) Scope of Biotechnology
 - (b) Gene cloning

- (c) Name four methods of gene transfer in plants
- (d) Animal cloning
- (e) Vaccines
- (f) Stem cell therapy
- (g) Ethical issues in Nanotechnology.

Unit I

2. Discuss briefly the following with suitable diagrams wherever required : **7×2=14**
 - (a) Define Biotechnology, Applications of Biotechnology
 - (b) Role of Microbes in industry and Agriculture.
3. Discuss briefly the following with suitable diagrams wherever required : **7×2=14**
 - (a) Concept of Recombinant DNA Technology
 - (b) Metabolic Engineering for over production of metabolites.

Unit II

4. Discuss briefly the principle and method of the following with suitable examples : **7×2=14**
 - (a) *Agrobacterium*-mediated gene delivery
 - (b) Particle bombardment method of gene delivery.
5. Discuss briefly the principle and method of the following with suitable examples : **7×2=14**
 - (a) *In vitro* fertilization and embryo transfer in Livestock
 - (b) Transfection techniques in animals and production of transgenic animals.

Unit III

6. Discuss briefly the following with suitable examples : **7×2=14**
 - (a) Role of Biotechnology in medicine
 - (b) Basic concept of Nano-medicine and drug delivery.