

- (b) Societal implications and Ethical issues on nano-science and technology.

9. Describe briefly the following :  $7 \times 2 = 14$

- (b) Scope and importance of Bio-Informatics  
(b) Types and importance of IPR in Biotechnology.

Roll No. ....

Exam Code : J-21

Subject Code—51670

**M.Sc. EXAMINATION**

(Batch 2017-2019)

(First Semester)

BIO-TECHNOLOGY

MBL-511

Introductory Biotechnology

*Time : 3 Hours*

*Maximum Marks : 70*

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

1. Write short notes on the following :  $2 \times 7 = 14$

- (a) Gene cloning  
(b) Biopesticides  
(c) Golden Rice  
(d) Nano Medicines

- (e) Bioremediation
- (f) Biosafety issues of transgenic plants
- (g) Transgenic Animals.

### **Unit I**

2. Describe briefly the following : **7×2=14**

- (a) Scope and importance of Biotechnology.
- (b) Concept of Recombinant DNA technology.

3. (a) Describe briefly role of microbes in Industry for alcohol production.

- (b) Describe briefly role of microbes in Bio-fertilizer production. **7×2=14**

### **Unit II**

4. Describe briefly the following : **7×2=14**

- (b) Plant tissue culture and its applications.
- (b) Principle and method of Agrobacterium-mediated genetic transformation of points.

5. Describe briefly the principle and method of the following : **7×2=14**

- (b) Chloroplast engineering for production of transgenic plants.
- (b) Embryo transfer in Humans.

### **Unit III**

6. Describe briefly the role of Biotechnology in the following : **7×2=14**

- (b) Medicine
- (b) Production of Vaccines.

7. Describe briefly the following : **7×2=14**

- (b) Principle and method of Gene Therapy
- (b) Role of Biotechnology in Pollution Control.

### **Unit IV**

8. Describe briefly the following : **7×2=14**

- (b) Overview of Nano Science and Technology Development