

AP-532

6. Explain in brief :

- (a) Bioremediation of recalcitrant compounds. 4
- (b) Ex-situ bioremediation. 4
- (c) Biodegradation of pesticides. 4

OR

- (d) Give advantages and disadvantages of in-situ bioremediation. 4
 - (e) How genetically modified microbes can be used for bioremediation. 4
 - (f) Explain in brief biodegradation of xenobiotic compounds. 4
7. Describe in detail preparation of project for financial assistance. 12

OR

Discuss the role of various funding agencies for biotechnology based projects in India. 12

B.Sc. (Part-III) Semester-VI Examination**6S : INDUSTRIAL MICROBIOLOGY****(Tissue Culture and Industrial Waste Management)**

Time—Three Hours]

[Maximum Marks—80

N.B. :— (1) All questions are compulsory.
(2) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks .

- (i) The cell lines which have limited life span are known as _____ .
- (ii) Trypsin is used for _____ of cells.
- (iii) The undifferentiated mass of plant cells is called as _____ .
- (iv) The excised piece of plant tissue or organ used for culture is called as _____ 2

(B) Choose correct option :

- (i) _____ culture is used for the production of haploids.
- (a) Callus
- (b) Organ
- (c) Shoot tip
- (d) Anther.

- (ii) IBA is :
 (a) Indole butyric acid
 (b) Indole boric acid
 (c) Indole benzoic acid
 (d) Inositol butyric acid.

- (iii) Plant cell without cell wall is :
 (a) Plasma cell
 (b) Vacuole
 (c) Protoplast
 (d) Plasma membrane.

- (iv) Bt stands for _____ in Bt cotton :
 (a) Bacillus typhi
 (b) Bacillus typhimurium
 (c) Bacillus thuringiensis
 (d) Bacillus thermophilus. 2

(C) Answer in **one** sentence :

- (i) Suspension culture.
 (ii) Biomass.
 (iii) Name major plant growth regulators.
 (iv) Somatic embryogenesis. 4

2. Explain in brief :

- (a) Continuous cell lines. 4
 (b) Mechanical disaggregation. 4
 (c) Organ culture. 4

OR

- (d) Interferon. 4
 (e) Enzymatic disaggregation. 4
 (f) Established cell lines. 4

3. Describe :

- (a) Composition of Murashige and Skoog media. 4
 (b) Ovary culture. 4
 (c) Shoot regeneration. 4

OR

- (d) Meristem culture. 4
 (e) Callus culture. 4
 (f) Suspension culture. 4

4. Explain :

- (a) Protoplast fusion. 4
 (b) Insect resistant plants. 4
 (c) Glyphosate resistance. 4

OR

- (d) Golden rice. 4
 (e) Somatic hybridization. 4
 (f) Bt crop. 4

5. Describe in detail solid waste management. 12

OR

What is composting ? Explain in detail the process of composting. 12