AS–1492

B.Sc. (Part—III) Semester—VI Examination

INDUSTRIAL MICROBIOLOGY

(Tissue Culture and Industrial Waste Management)

Time : Three Hours] [Maximum Marks : 80

Note :— (1) **ALL** questions are compulsory.

(2) Draw labelled diagrams wherever necessary.

1. (A) Fill in the blanks : 2

(i) Cytokinin promotes regeneration of _____.

(ii) A hybrid produced by fusion of Somatic cells of two varieties is _____.

(iii) Totipotency is ability of _____ to regenerate.

(iv) The plant part which is cultured is called _____.

(B) Choose correct alternative : 2

(i) Auxin promotes the regeneration of :

(a) Root (b) Shoot

(c) Both (a) and (b) (d) None of the these

(ii) The xenobiotics compounds are _____.

(a) Biodegradable (b) Non-biodegradable

(c) Resistant (d) None of these

(iii) The important gas present in biogas :

(a) CH (b) O_3

(c) CH_4 (d) All above

(iv) Pantpradhan Rojgar Yojana is funding agencies :

(a) Mahila Bachat Gat (b) Child Education

(c) Rural development scheme (d) Young entrepreneur

(C) Answer in **one** sentence : 4

(i) What is biogas ?

(ii) Define Embryo culture.

(iii) What is callus ?

(iv) What is sewage ?

2. Explain :

(a) Composition of animal cell culture 4

(b) Continuous cell line 4

(c) Organ culture. 4

OR

(d) Mechanical degeneration 4

(e) Application of cell lines 4

(f) Composition of animal cell culture. 4

3. Explain :

(a) Shoot regeneration 4

(b) Surface sterilization of explant 4

(c) Ovary culture. 4

OR

(d) Callus isolation techniques 4

(e) Somatic embryogenesis 4

(f) Meristem culture. 4

4. Describe :

(a) Biotic stress 4

(b) Transgenic plants 4

(c) Application of hybrid. 4

OR

(d) Improvement of Crop Yield 4

(e) Protoplast isolation 4

(f) Abiotic stress. 4

5. Explain in brief :

(a) Biogas production 4

(b) Solid waste management 4

(c) Composting. 4

OR

(d) Sewage composition 4

(e) Biological methods for treatment of industrial effluents 4

(f) Draw diagram of biogas plant. 4

6. Explain the role of microbes in degradation of crude oil and recovery of metals. 12

OR

Describe the bioremediation with advantages and disadvantages. 12

7. Describe in detail principles of patenting. 12

OR

Describe in detail various funding agencies for biotechnological products. 12