

M.Sc. (Part-I) Semester-II (CBCS Scheme) Examination

MICROBIOLOGY

(Environmental Microbiology and Extremophiles)

Paper-VIII

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) All questions are compulsory and carry equal marks.

(2) Draw neat labelled diagrams and give suitable examples wherever necessary.

1. Define recalcitrant organic compounds and explain their effects due to their presence in natural ecosystem. 16

OR

- (a) Explain consequences of biomagnification. 8
(b) Explain biodegradation of toxic chemicals. 8
2. (a) Explain role of phosphorus in eutrophication. 8
(b) Explain control of eutrophication. 8

OR

Describe microbial changes induced by organic and inorganic pollutants during eutrophication. 16

3. (a) What are barophiles ? Give their ecological significance. 8
(b) Give applications of extremophiles. 8

OR

- (c) Give mechanism of adaptations in acidophiles. 8
(d) Give applications of thermophiles. 8

4. (a) Why coliform organisms are regarded as indicator of faecal pollution ? Explain in detail. 8
- (b) Explain various disinfectants used for water. Describe different methods of chlorination. 8

OR

- (c) Describe Multiple Tube Dilution Technique (MTDT) used for bacteriological analysis of water. Explain MPN. Compare multiple tube dilution technique with MFT. 8
- (d) What are standards of drinking water ? Explain. 8
5. Draw flow sheet diagram of municipal waste water treatment process. Describe various aerobic treatment processes in detail. 16

OR

- (a) Describe anaerobic digestion process in detail. 8
- (b) Trickling filter. 8