



MBU-003-019405 Seat No. _____

M. Sc. Microbiology (Sem. IV) Examination

April / May - 2018

Micro 423 Environmental Biotechnology-II

(Old Course)

Faculty Code : 003

Subject Code : 019405

Time : 3 Hours]

[Total Marks : 70

- 1** Answer any 7 : (2 marks each) **14**
- i. What is acceptable biodegradation ?
 - ii. What is molecular recalcitrance ?
 - iii. What is biomagnification ?
 - iv. What are white rot fungi ?
 - v. What is cellulosome ?
 - vi. Enlist reactive oxygen species involved in lignin degradation by WRF.
 - vii. Enlist methyl donors involved in the microbial methylation of metalloids.
 - viii. What is acid mine drainage ?
 - ix. What are arsenic fungi ?
 - x. What is Minamata Bay disease ?
- 2** Answer any 2 of the following : (7 marks each) **14**
- i. Describe various substrate-based parameters influencing biodegradation.
 - ii. Describe degradation of cellulose by brown rot fungi.
 - iii. Give an account of non-enzymatic components of ligninolytic system of white rot fungi.

3 Answer the following : (7 marks each) **14**

- i. Discuss microbial degradation of polycyclic aromatic hydrocarbons.
- ii. Describe the role of microbes in pesticide degradation.

OR

3 Answer the following : (7 marks each) **14**

- i. Describe microbial degradation of halogenated organic compounds.
- ii. Describe degradation of TNT by microbes.

4 Answer the following : (7 marks each) **14**

- i. Explain involvement of microbes in the generation of acid mine drainage.
- ii. Describe microbial methylation of mercury.

5 Write notes on any 2 of the following : (7 marks each) **14**

- i. Types of bioremediation processes
- ii. Mycoremediation
- iii. Phytoremediation
- iv. Genetically engineered microbes in bioremediation
