



**PT-003-019405**

Seat No. \_\_\_\_\_

**M. Sc. (Microbiology) (Sem. IV) (CBCS) Examination**

**August - 2020**

**MICRO 423 : Environmental Biotechnology - II**

**Faculty Code : 003**

**Subject Code : 019405**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

**1 Answer any seven : (2 marks each) 14**

- (i) What is primary biodegradation?
- (ii) Identify the role of cellulose binding protein in cellulosome.
- (iii) Enlist groups of fungi that degrade lignin.
- (iv) What is the difference between oxidases and peroxidases?
- (v) What is molecular recalcitrance?
- (vi) What is BOD
- (vii) What is yellow buoy?
- (viii) What is the role of dioxygenases in the degradation of aromatic pollutants?
- (ix) Name the methyl group donor in microbial methylation of heavy metals.
- (x) Enlist inorganic pollutants produced by microbes.

**2 Answer any two of the following : (7 marks each) 14**

- (i) Discuss environmental factors affecting biodegradation of organopollutants.
- (ii) Describe cellulolytic system of anaerobic clostridia.
- (iii) Give comparative account of cellulose and lignin degradation by fungi.

- 3** Answer the following : (7 marks each) **14**
- (i) Describe degradation of anthracene by white rot fungi.
  - (ii) Describe microbial degradation of pesticides.

**OR**

- 3** Answer the following : (7 marks each) **14**
- (i) Comment on degradation of nitroaromatics by ligninolytic peroxidases.
  - (ii) Describe microbial dehalogenation reactions.

- 4** Answer the following : (7 marks each) **14**
- (i) Describe microbiology of acid mine drainage.
  - (ii) Discuss microbial methylation of arsenic.

- 5** Write note on any two of the following : (7 marks each) **14**
- (i) Mycoremediation
  - (ii) Ex situ bioremediation
  - (iii) Phytoremediation
  - (iv) Composting

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