



PT-003-1194005

Seat No. _____

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

August - 2020

Paper - 423 : Environmental Biotechnology - II

Faculty Code : 003

Subject Code : 1194005

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

[Total Marks : 70

1 Answer any Seven : (2 marks each) 14

- (i) What is cellulosome?
- (ii) What is Fenton's reaction?
- (iii) What is a versatile peroxidase?
- (iv) Why do anaerobic conditions favour degradation of chloro and nitro-organics?
- (v) What is the difference between cometabolic and incidental degradation?
- (vi) What is acid mine drainage?
- (vii) What is anaerobic respiration?
- (viii) What is mycoremediation?
- (ix) What is bioaugmentation?
- (x) What is in situ bioremediation?

2 Answer Any Two of the following : (7 marks each) 14

- (i) Describe oxidative degradation of cellulose by brown rot fungi.
- (ii) Describe the principles of lignin degradation by white rot fungi.
- (iii) Discuss types of pectin depolymerizing enzymes produced by fungi.

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

(i) Discuss degradation of chloroorganic pollutants by white rot fungi.

(ii) Describe factors affecting biodegradation of PAHs.

OR

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

(i) Describe ring-cleaving oxygenases involved in biodegradation of organopollutants.

(ii) Describe various enzymatic reactions involved in biodegradation of pesticides.

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

(i) Discuss methylation of arsenic by fungi.

(ii) Describe the role of inorganic pollutants produced by microbes in ozone depletion.

5 Write a short note on Any **Two** of the following : **14**

(7 marks each)

(i) ex situ remediation

(ii) Composting

(iii) Phytoremediation

(iv) Biopile
