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MSC4eb2E0113

Seat No: _____

M.Sc. Semester - 4 (CBCS) Examination

March/April- 2019

ENVIRONMENTAL BIOTECHNOLOGY -2

(ELECTIVE - 1)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q. 1 Answer the following (any seven out of ten, each of two marks) 14

1. What is Bioaugmentation?
2. What is Biostimulation? Explain its role in bioremediation of contamination.
3. Describe *ex-situ* bioremediation.
4. Describe organic pollutants in brief.
5. What is importance of lignin peroxidase?
6. Give an example of pesticide degrading microorganisms.
7. Explain role of surfactant in biodegradation of PAHs.
8. What is acid mine drainage?
9. Enlist the Genetic modified organisms and describe its importance in bioremediation.
10. Role of microbes in methylation of heavy metals.

Q. 2 Answer the following (any two out of three, each of seven marks) 14

1. Explain Lignin biodegradation with suitable example.
2. Describe enzymatic reaction involved in cellulose biodegradation.
3. Discuss biodegradation of pectin.

Q.3 (A) Answer the following

1. Write a note on pesticide biodegradation [5]
2. Explain *in situ* bioremediation of PAHs. [5]
3. Explain the role of microbes in biodegradation of nitroaromatics. [4]

OR

Q.3 (B) Answer the following (each of seven marks) 14

1. Discuss the biodegradation PAHs.
2. Write a detailed note on Chloroaromatics.

Q.4 (A) Answer the following (any two out of three, each of seven marks) 14

1. Explain microbial methylation of mercury and its health hazards.
2. Explain the importance of microbes in acid mine drainage.
3. Describe microbial methylation of arsenic.

Q.5 Answer the following (any two out of four, each of seven marks) 14

1. Discuss *in situ* bioremediation of organic pollutants.
2. Describe the bioremediation potential of fungi.
3. What is Genetic modified organisms? Explain their role in bioremediation organic pollutants.
4. Explain strategies involved bioremediation.
