



DNN-003-024203

Seat No. _____

M. Phil. (Science) (Sem. II) (CBCS) Examination

May / June – 2015

**Micro 203 : Biodegradation of Xenobiotic
Compounds**

Faculty Code : 003

Subject Code : 024203

Time : 3 Hours]

[Total Marks : 70

- Q1. Answer any 7 (2 marks each) 14**
- Enlist the aromatic ring fission pathways employed by aerobic bacteria.
 - Enlist alternative terminal electron acceptors.
 - What is Yellow Buoy?
 - What makes lignin a recalcitrant compound?
 - Why are xenobiotic compounds more likely to persist?
 - What is the difference between BOD and COD?
 - What is incidental metabolism?
 - What is the difference between methylotrophy and methanotrophy?
 - What is Minamata bay disease?
 - What is bioaugmentation?
- Q2. Answer any 2 of the following (7 marks each) 14**
- Lignin degradation by WRF is a secondary metabolic event. Justify.
 - Discuss environmental parameters influencing biodegradation in nature.
 - Give an account of wood rotting fungi.
- Q3. Answer the following (7 marks each) 14**
- Give an account of microbial degradation of dyes.
 - Describe microbial degradation of DDT.
- OR**
- Q3. Answer the following (7 marks each) 14**
- Discuss non-enzymatic reactions used by microbes in pesticides degradation.
 - Describe the initial reactions employed by fungi in the degradation of PAHs.
- Q4. Answer any 2 of the following (7 marks each) 14**
- What is Minamata disease? Discuss microbiology of mercury methylation.
 - Give an account of bioremediation of radioactive wastes.
 - Describe the microbiology of acid mine drainage.
- Q5. Write a short note on any 2 of the following (7 marks each) 14**
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| i) Bioremediation | ii) Lignin peroxidase |
| iii) anaerobic ring cleavage reactions | iv) Methane monooxygenase |