

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – WINTER 2013****Subject Code: 153701****Date: 27-11-2013****Subject Name: Biodegradation and Bioremediation****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is the bioremediation and explain the types of bioremediation? **07**
(b) What is biodegradation and explain the factors affecting biodegradation **07**
- Q.2** (a) Explain Natural attenuation in bioremediation. **07**
(b) Explain the treatment of distillery wastes with flow sheet diagram. **07**
OR
(b) Explain the process of removal of heavy metals from waste water. **07**
- Q.3** (a) Write a detailed account on microbial biodegradation of xenobiotics **07**
(b) What is the process of treatment and characteristics of the wastes water **07**
OR
- Q.3** (a) Why the coliform organisms are used in the bacterial analysis of water. **07**
(b) Explain the biological control of air pollution **07**
- Q.4** (a) What is the different between solid phase and slurry phase bioremediation **07**
(b) What is the process involve in the sludge treatment explain in detail **07**
OR
- Q.4** (a) Explain the Bioventing process in Bioremediation. **07**
(b) What is the concept and scope of Environmental biotechnology **07**
- Q.5** (a) Explain the activated sludge process with full indicated diagram **07**
(b) Explain the anaerobic digester in detail **07**
OR
- Q.5** (a) Explain the degradation of sulphur compounds present in coal and petroleum **07**
(b) Define the following terms:- **07**
1. Acclimation 2. Recalcitrance 3. Cometabolism 4. Bioaugmentation
5. Biostimulation 6. Bioscrubber 7. Land farming
