

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – SUMMER 2013****Subject Code: 160403****Date: 28-05-2013****Subject Name: Environmental Biotechnology****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)** Define environmental biotechnology and comment on the environmental risks associated with biotechnological innovations. **07**
- (b)** What is Cleaner Technology? Comment on the use of cleaner technologies in paper, plastic and fermentation industries. **07**
- Q.2 (a)** What is biodegradation? Comment on the biodegradation of environmental pollutants. **07**
- (b)** What are commercial prospects of biological waste gas purification? **07**
- OR**
- (b)** Comment on the features of anaerobic process. Briefly explain methanogenesis and its significance. **07**
- Q.3 (a)** What is UASB reactor? Describe the principle and applications of UASB reactor. **07**
- (b)** Compare and contrast aerobic and anaerobic treatment. **07**
- OR**
- Q.3 (a)** What are the environmental impacts of spilled oil and grease deposits? Discuss biotechnological methods for their removal. **07**
- (b)** What are the impacts of agricultural practices on the environment? How such environmental impacts can be reduced? **07**
- Q.4 (a)** What are industrial effluents? Comment on the reducing environmental impact of industrial effluents. **07**
- (b)** Define bioremediation and comment on the use of naturally occurring microorganisms for bioremediation. **07**
- OR**
- Q.4 (a)** Define composting. Describe the procedure for production of compost. **07**
- (b)** What is biomass? Discuss the sources and characteristics of biomass. **07**
- Q.5 (a)** Describe the method for the production of hydrogen using microorganisms. Can we use this hydrogen as fuel? **07**
- (b)** Describe the production and application of biogas. **07**
- OR**
- Q.5 (a)** What is SPIC? Explain the principle and application of SPIC strategy? **07**
- (b)** Write a note on biosensor and bioremediation market. **07**
