Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI • EXAMINATION – SUMMER • 2015

Subject code: 160403 **Date:08/05/2015**

Subject Name: Environmental Biotechnology

Time: 10.30AM-01.00PM **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. Describe the pros and cons of biotechnological innovations.	**07**
	(b)	What is biological waste gas? How can you purify biological waste gas?	**07**
Q.2	**(a)**	Comment on the commercial applications of biological waste gas.	**07**
	(b)	What is cleaner production? How can you implement cleaner technologies in paper and plastic industries?	**07**
		OR	
	(b)	Explain aerobic and anaerobic treatment highlighting their advantages and disadvantages.	**07**
Q.3	**(a)**	What is the process of biodegradation? How pollutants are degraded by the process of biodegradation?	**07**
	(b)	The spilled oil and grease deposits create environmental nuisance. Can you overcome this nuisance using biological methods?	**07**
		OR	
Q.3	**(a)**	Comment on the environmental impact of agricultural practices.	**07**
	(b)	Comment on the SPIC strategy on bio-treatment.	**07**
Q.4	**(a)**	Compare bioremediation and phytoremediation. Describe the process of bioremediation using microorganisms.	**07**
	(b)	How can you produce hydrogen gas using microorganisms? Give some examples of microorganisms producing hydrogen gas.	**07**
		OR	
Q.4	**(a)**	What is composting? Describe the process of composting. Mention the quality requirements of compost to be used as fertilizer.	**07**
	(b)	Comment on the production and uses of biogas.	**07**
Q.5	**(a)**	Comment on the construction and uses of UASB reactor.	**07**
	(b)	Comment on the sources and applications of biomass.	**07**
		OR	
Q.5	**(a)**	What is methanogenesis? Describe the process of methanogensis.	**07**
	(b)	Describe the role of environmental biotechnology in controlling and reducing the pollution of the environment.	**07**

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