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## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-IV (NEW) EXAMINATION - SUMMER 2015** 

Subject Code: 2143503		NI TO CARDO C	Date: 01/06/2015	
Subject Name: Environmental Bioscience Time: 10.30am-01.00pm Instructions:		0.30am-01.00pm Total Marks:	Total Marks: 70	
	1. 2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.		
Q.1	(a)	What are enzymes? Describe their classification and nomenclature. Also write its applications.	07	
	<b>(b)</b>	What are the various role of microorganisms in environment? Explain briefly.	07	
Q.2	(a)	How the bio scrubbers and bio filters play an important role in secondary treatment? Explain briefly.	07	
	<b>(b)</b>	Define Soil? Discuss the physical characteristics of soil with neat and clean schematic diagram.	07	
	(b)	OR What are the significances of microbial growth curve? Explain its various phases	07	
	<b>(b)</b>	What are the significances of microbial growth curve? Explain its various phases with suitable diagram.	07	
Q.3	(a) (b)	What is protein? Give its structure, classification and functions.  Define the term bioremediation. Explain various methods of bioremediation with suitable example.	07 07	
Q.3	(a)	OR  Define bacteriological media. What nutritional requirement in terms of chemicals is needed by all the forms of life for growth and cellular maintenance? Explain briefly.	07	
	<b>(b)</b>	What is amino acid? Give its structure, classification and function.	07	
Q.4	(a)	What is the basic principle of microbial transformation? Explain & Enlist factors that affect the aerobic organic matter decomposition?	07	
	<b>(b)</b>	Define microorganisms & microbiology. Briefly discuss important events (at least five) leading to environmental microbiology.  OR	07	
Q.4	(a)	What are the physical conditions that affect the growth of organism? Discuss briefly.	07	
	<b>(b)</b>	Draw a suitable diagram of WTPs and ETPs. How the ETPs is different from CETP. Explain it briefly with various treatment steps.	07	
Q.5	(a)	Describe how the physical composition of soil influences the magnitude and diversity of microbial flora.	07	
	<b>(b)</b>	Define the term biotechnology. What are applications of biotechnology in pollution control? Explain briefly.	07	
Q.5	(a)	<b>OR</b> What is biogas and its composition? How biogas is different from other gases? Describe biochemical reactions involved in biogas production.	07	
	(b)	Write short notes on:  i) Culture media  ii) Gram staining  iii) Aerobic, Anaerobic and facultative bacteria	02 02 03	

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