Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV • EXAMINATION - SUMMER 2015

Subject Code:143503 Subject Name: Environmental Bioscience Time: 10.30am-01.00pm Instructions:			Date: 01/06/2015 Total Marks: 70	
		0.30am-01.00pm Total Marks: 7		
		Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Define microorganisms & microbiology? Briefly discuss important events (at least five) leading to environmental microbiology.	07	
	(b)	Discuss the major kind of microbial characteristics & its classification.	07	
Q.2	(a)	Describe how the physical composition of soil influences the magnitude and diversity of microbial flora?	07	
	(b)	Define Soil? Discuss the physical characteristics of soil with neat and clean schematic diagram.	07	
	(b)	OR What is amino acid? Give it's structure, classification and function.	07	
Q.3	(a) (b)	What are proteins? Give its structure, classification and functions. How can microbes help in environment? Give the brief introduction on bacteria, algae and enzyme.	07 07	
		OR		
Q.3	(a)	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)	What do you mean microbial growth curve? Explain it's various phases with suitable diagram.	07	
Q.4	(a)	What is the basis principle of microbial transformation? Explain & Enlist factors	07	
	(b)	that affect the aerobic organic matter decomposition? Give the nomenclature and classification of enzymes. Explain the properties of enzymes also.	07	
Q.4	(a)	OR What are the physical conditions that affect the growth of organism? Discuss briefly.	07	
	(b)	What is bioremediation? Explain with it's types and applications.	07	
Q.5	(a)	Where are septic tanks used? Describe the microbiological activities that take	07	
	(b)	place in a septic tank. Define the term biotechnology. What are applications of biotechnology in control of pollution? Explain briefly.	07	
Q.5	(a)	OR What is biogas? Which conditions are required for biogas production? How is biogas produced from waste water?	07	

i)	Biofilter	0^2
ii)	Bioscrubber	02
iii)	Sources of microbes in air	03
