Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III(New) EXAMINATION - SUMMER 2016

Subject Code:2131302 Date:02/06/2016

Subject Name:Environmental Microbiology & Bioremediation

Time:10:30 AM to 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.

			MARKS	
Q.1		Short Questions	14 1	
	1	1 7 1 E		
		(a) Adsorption (c) Absorption		
		(b) penetration (d) Replication		
	2	Which of the following structure is absent in eukaryotic cells?		
		(a) Mitochondria (c) Chloroplasts		
		(b) Golgi structure (d) Mesosome		
	3 The cooci which mostly occur in single or pairs are		1	
		(a) Streptococci (c) Tetracocci		
		(b) Diplococci (d) None of these		
	4	Genetic system is located in the prokaryotes in		
	-	(a) nucleoid (c) nuclear material	1	
		(b) chromatin (d) all of these		
	5	5 The solidifying agent commonly used in preparation of media		
		is/are		
		(a) agar (c) both (a) and (b)		
		(b) silica gel (d) none of these		
	6	Define colonies	1	
	7	What is pasteurization?	1	
	8	Define Bioremediation		
	9	Define the term Protozoa and protozoology.		
	10	Define the term microscope.		
	11	Define the term inoculation		
	12	<i>5 25</i>		
	13	1		
	14	1 1		
0.2	(a)	microbiology laboratory?		
Q.2	(a) (b)	Give the classification of fungi Write the importance of protozoa in brief.	03 04	
	(b) (c)	Explain the importance of microbiology in the field of		
	(0)	Environmental Engg.	. 07	
		OR		
	(c)	(c) Give the classification of viruses with respect to their shape and		

		types. Also enlist the typical diseases caused by virus.	
Q.3	(a)	Differentiate between Bright field and dark field microscopy.	03
	(b)	Write a brief note on "History of Microbiology".	04
	(c)	Draw a neat sketch of bacterial cell and explain its different parts.	07
		OR	
Q.3	(a)	What is the role of algae in environment?	03
	(b)	Explain the beneficial and harmful effects of Fungi on environment?	04
	(c)	What is pure culture? Prepare a list of different techniques for isolation of pure culture and explain each method.	07
Q.4	(a)	Enlist factors affecting antimicrobial action?	03
Ţ.Ţ	(b)	What is the distinction between sterile and disinfected term?	04
	(c)	Prepare a list of different physical agents for killing of microbes and explain any one.	07
		OR	
ΩA	(a)	What is In-situ Bioremediation?	03
Q.4	(a)		03
	(b)	Differentiate between Antiseptic and Sanitizer.	
	(c)	Write a short note: Ex-situ bioremediation of soil	07
Q.5	(a)	Enlist and explain the different types of media used in microbiology.	03
	(b)	Differentiate between pure culture and mixed culture.	04
	(c)	Explain the role of microbes in bioremediation	07
	` /	OR	
Q.5	(a)	What is significance of MPN test for water?	03
	(b)	Differentiate between: Prokaryotic and Eukaryotic Cell	04
	(c)	List the major condition influencing the effectiveness of	07
		antimicrobial chemical agent.	
