Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2131302 **Date: 02/06/2017**

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.**

Q.1		**Short Questions**	**14**
	1	What is Pure culture?	
	2	What is Fermentation?	
	3	What is Eutrophication?	
	4	Define Prokaryotic organism.	
	5	Define Eukaryotic organism.	
	6	Write one disease caused by Bacteria.	
	7	Write one disease caused by Fungi.	
	8	Write one disease caused by Virus.	
	9	Write one disease caused by Protozoa.	
	10	What is In-situ Bioremediation?	
	11	What is Ex-situ Bioremediation?	
	12	What is Sterilization**?**	
	13	What is Disinfection?	
	14	What is Microscopy?	
Q.2	**(a)**	Enlist chemical compounds for Disinfection.	**03**
	(b)	Differentiate between Prokaryotes and Eukaryotes.	**04**
	(c)	Write a short note on role of microbes in Industry and Food.	**07**
		OR	
	(c)	Enlist and explain physical and chemical agents for control of Microbes.	**07**
Q.3	**(a)**	Enlist methods of isolation of Pure culture.	**03**
	(b)	Draw neat sketch of Bacterial cell.	**04**
	(c)	Explain the types of Viruses with sketches.	**07**
		OR	
Q.3	**(a)**	Enlist Staining techniques.	**03**
	(b)	Enlist the beneficial and harmful effects of Fungi on environment?	**04**
	(c)	Write the causes, symptoms, treatment and prevention of any one disease.	**07**
Q.4	**(a)**	Enlist factors affecting antimicrobial action?	**03**
	(b)	What is significance of MPN test for water?	**04**
	(c)	Write a short note on Vinegar production using microbes.	**07**
		OR	
Q.4	**(a)**	Give classification of Microbes.	**03**
	(b)	Explain role and importance of bacteria in environment.	**04**
	(c)	Draw neat sketch and explain working principle of Bright field Microscope.	**07**
Q.5	**(a)**	What is Bioremediation?	**03**
	(b)	Write a brief note on In-situ bioremediation of Soil and Groundwater.	**04**
	(c)	Write a short note on innovative treatment technologies using Bioremediation.	**07**
		OR	

Q.5	**(a)**	What is Fundamental principle of Bioremediation?	**03**
	(b)	Write a brief note on Ex-situ bioremediation of Soil.	**04**
	(c)	Write a short note on role of microbes in Bioremediation.	**07**

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