

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2143503****Date:17/05/2019****Subject Name: Environmental Bioscience****Time:02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		<b>MARKS</b>
<b>Q.1</b>	(a) Define Environmental Microbiology. Enlist its application in environmental Engineering.	<b>03</b>
	(b) Discuss historical aspects of microbiology.	<b>04</b>
	(c) Define Nutrient agar & broth. Discuss the procedure to prepare Nutrient agar with all requirement in laboratory.	<b>07</b>
<b>Q.2</b>	(a) Define: Cells, Eukaryotes, Aerobic bacteria	<b>03</b>
	(b) Introduce Protozoa. Describe its role in environment.	<b>04</b>
	(c) Briefly discuss microbial growth curve with suitable diagram.	<b>07</b>
	<b>OR</b>	
	(c) Describe the classification of microorganism.	<b>07</b>
<b>Q.3</b>	(a) Write down the function cell membrane and ER.	<b>03</b>
	(b) Explain pour plate method with suitable diagram.	<b>04</b>
	(c) Classify bacteria on the basis of shape & its growth requirements.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Write down the function ribosomes and mitochondria.	<b>03</b>
	(b) Explain streak plate method with suitable diagram.	<b>04</b>
	(c) Define Culture media. Briefly discuss its classification.	<b>07</b>
<b>Q.4</b>	(a) Explain the procedure of Autoclaving.	<b>03</b>
	(b) Introduce aerobic metabolism with its functions.	<b>04</b>
	(c) What are the characteristics of Algae? Describe the classification of Algae.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Introduce amino acid with its general structure.	<b>03</b>
	(b) Explain the structure of proteins.	<b>04</b>
	(c) Briefly describe microbial flora of soil.	<b>07</b>
<b>Q.5</b>	(a) Introduce nucleus with it functions.	<b>03</b>
	(b) Write a short note on Microbiology of air.	<b>04</b>
	(c) What is Microbial ecosystem? Briefly discuss positive association among soil microorganism.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Write a short note on Enzymes.	<b>03</b>
	(b) Introduce carbohydrate. Enlist its functions.	<b>04</b>
	(c) What do you understand by biogeochemical cycle? Explain Nitrogen cycle with suitable diagram.	<b>07</b>

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