

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-IV(New) EXAMINATION – SUMMER 2016**

**Subject Code:2143503****Date:03/06/2016****Subject Name:Environmental Bioscience****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
<b>Q.1</b>	(i) Write down general formula of the followings:	<b>14</b>
	<b>a</b> carbohydrates	
	<b>b</b> amino acid	
	(ii) Draw structure of the followings:	
	<b>a</b> lactose	
	<b>b</b> glucose	
	(iii) Define the followings:	
	<b>a</b> anaerobic bacteria	
	<b>b</b> facultative bacteria	
	<b>c</b> biotransformation	
	<b>d</b> metabolism	
	<b>e</b> nitrification	
	<b>f</b> water pollution	
<b>g</b> acclimatization		
<b>h</b> pure culture		
<b>i</b> algae and fungi		
<b>j</b> isolation and cultivation of microbes		
<b>Q.2</b>	(a) Write down the Indian standards for potable water.	<b>03</b>
	(b) Enlist the role and application of environmental biotechnology in pollution control.	<b>04</b>
	(c) Briefly discuss the microbial transformation of nitrogenous compounds.	<b>07</b>
<b>OR</b>		
	(c) Write short notes on biomolecules. Also write down various function and role of carbohydrates.	<b>07</b>
<b>Q.3</b>	(a) Differentiate prokaryotic and eukaryotic cells.	<b>03</b>
	(b) Discuss the microbiology of water.	<b>04</b>
	(c) Discuss the classification of microbes with their characteristic.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Enlist the name of any ten amino acid with their symbol.	<b>03</b>
	(b) Enlist cell constituent and their functions.	<b>04</b>
	(c) Briefly discuss the aerobic metabolism and its functions.	<b>07</b>
<b>Q.4</b>	(a) Write down the various role of amino acids.	<b>03</b>
	(b) Discuss the various structural levels of proteins.	<b>04</b>
	(c) Briefly discuss the characterization of carbohydrates.	<b>07</b>

**OR**

- Q.4** (a) Write down the various role of proteins. **03**  
(b) Define the enzyme. Discuss their role in pollution control system. **04**  
(c) Write down the application of biotechnology in pollution control system and process. **07**

- Q.5** (a) Write short notes on bio filters. **03**  
(b) Discuss the microbial growth curve in brief. **04**  
(c) What do you understand by bioremediation? How bio scrubbers useful in pollution control. Discuss in brief. **07**

**OR**

- Q.5** (a) Write short notes on isolation technique of microorganism. **03**  
(b) Discuss the bacteria and algae as a microbial flora of soil. **04**  
(c) What is Biogas? How it can be produce from waste. Discuss various steps involved in biogas production. **07**

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