[28]

No. of printed pages: 02

## SARDAR PATEL UNIVERSITY

M. Sc. (Integrated) Biotechnology, Second Semester Examination Tuesday, 28<sup>th</sup> April, 2015

Time: 10:30 a.m. to 1:30 p.m. PS02CIGB04: Microbiology I

Total Marks: 70

<b>Q</b> 1	Multiple Choice Questions. (All are compulsory)		[08]
I	Pure culture of bacteria was:		
	a. Robert Koch	b. Joseph Lister	
	c. Louis Pasteur	d. Leeuwenhoek	
II	Louis Pasteur was professor	of	
	a. Physics	b. Chemistry	
	c. Maths	d. Biology	
III	The shape of Treponema pal		
	a. cocci	b. spiral	
	c. rod	d. none of these	
IV	Flagella is made up of		
	a. casein	b. flagellin	
	c. papain	d. keratin	
V	is used in electron microscopy for negative staining.		
	a. Crystal violet	b. Phosphotungstic acid	
	c. Safranin	d. Methylene blue	
VI	is a type of differential staining.		
	a. Acid fast staining	b. Gram's Staining	
	c. Both a and b	d. None of these	
VII	Which organisms use CO <sub>2</sub> as major or sole carbon source?		
	a. Autotrophs	b. Heterotrophs	
	c. Both a and b	d. None of these	
VIII	Which of this is an isolation technique?		
	a. Streak plate	b. Spread plate	
	c Pour plate	d All of these	

Q 2	Short Questions (Attempt any seven out of nine).		
I	Write down Koch's postulate.		
II	Define pure culture and colony.		
.III	Enlist the functions of capsule.		
IV	Write the difference between the cell wall of Gram positive and Gram negative bacteria.		
V	Define intensifier and mordant.		
VI	Give the limitations of electron microscopy.		
VII	What do you mean by neumerical aperture and limit of resolution?		
VIII	Write the types of bacteria on the basis of energy and source of electrons.		
IX	What is the role of peptone and yeast extract in media?		
Q 3A.	Explain spontaneous generation and abiogenesis in brief. List the contributions of scientists who disapproved this theory.	[06]	
Q 3B.	Write a short note on Germ theory of disease.	[06]	
_	OR		
Q 3B.	Give a brief account on the contributions of Louis Pasteur.	[06]	
Q 4A.	Describe the bacterial cell wall in detail.	[06]	
Q 4B.	Explain the structure of endospore and process of sporulation.  OR	[06]	
Q 4B.	Give a detailed account on bacterial flagella and its hydrodynamics.	[06]	
Q 4D.	Give a detailed account on bacterial mageria and its hydrodynamics.	լսսլ	
Q 5A.	Discuss in detail the fluorescence microscopy and write its application.	[06]	
Q 5B.	Explain physical and chemical theories of staining.	[06]	
	OR		
Q 5B.	Write a note on specimen preparation for electron microscopy.	[06]	
Q 6A.	Explain the methods for isolation of pure culture.	[06]	
Q 6B.	Write a short note on nutritional types of bacteria.	[06]	
•	OR		
Q 6B.	Discuss the types of media.	[06]	
-			