

16 OCT 2019

B.Sc. Semester V Examination – October 2019  
MICROBIOLOGY

Paper: MIC-CC-503 Microbial Genetics of Prokaryotes  
Time: 02.30 Hours.

Paper Code: 21488  
Total marks: 70

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Instructions: (i) Figures to the right indicate marks for respective question.  
(ii) Draw neat, clean and labeled diagram wherever required.

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Q.1 (A)	Explain: Post replicative modifications and their significance.	14
	<b>OR</b>	
Q.1(A)(i)	Explain: Watson and Crick's DNA model.	07
Q.1(A)(ii)	Explain: Griffith's experiment.	07
Q.1 (B)	Short Questions (Attempt any FOUR)	04
	1) What is sugar-phosphate back bone?	
	2) Define: Muton.	
	3) What is proof reading?	
	4) How do plasmid and chromosome differ?	
	5) What was the prime finding of Harshey and Chase?	
	6) What is proof reading?	
Q.2 (A)	Give detailed account on characteristics of genetic code with Wobble hypothesis.	14
	<b>OR</b>	
Q.2 (A)(i)	Write a note on: Termination of transcription.	07
Q.2(A)(ii)	Write a short note on: Fate of ribosomes.	07
Q.2(B)	Short Questions (Attempt any FOUR)	04
	1) What is 'charging' of t-RNA?	
	2) Enlist termination codons.	
	3) Enlist initiation and terminating codons.	
	4) What are sigma factors?	
	5) Define: Polysome.	
	6) Enlist components of 70S initiation complex.	
Q.3(A)	Explain: Classes of bacterial mutants.	14
	<b>OR</b>	
Q.3(A) (i)	Discuss: Phage Mu and biological mutagenesis.	07
Q.3(A)(ii)	Explain: Conditional mutants with suitable examples.	07
Q.3(B)	Short Questions (Attempt any THREE)	03
	1) How acridine orange acts as a mutagen?	
	2) What is intragenic suppression?	
	3) Which enzyme is responsible for photo-reactivation?	
	4) What is SOS regulation?	
	5) What is missense mutation?	
Q.4(A)	Explain: Construction and regulation of <i>lac</i> operon.	14
	<b>OR</b>	
Q.4(A) (i)	Discuss: Transfer of genes between Hfr x F' strains.	07
Q.4(A)(ii)	Write a note on: General properties of plasmids.	07
Q.4(B)	Short Questions (Attempt any THREE)	03
	1) What do you mean by horizontal gene transfer?	
	2) Define: Inducible operon.	
	3) What are insertion sequences?	
	4) What is $\alpha$ complementation?	
	5) Enlist any four types of natural plasmids.	

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