

DCT-003-1131001

Seat No.

M. Sc. (Biotech) (Sem. I) (CBCS) Examination

August - 2022

BT-101: Microbiology

Faculty Code: 003 Subject Code: 1131001

Time : $2\frac{1}{2}$ Hours] [Total Marks : 70]

Instruction: Attempt any **five** questions.

- 1 Answer the following: (Each of **02** marks) 14
 - (1) Define: spore.
 - (2) Give role of calcium DPA in complex in endospore.
 - (3) Define: (1) Sporangiospore (2) Conidiospore.
 - (4) Define: (2) Selective media (2) differential media.
 - (5) During log phase growth of bacterial culture a sample is taken at 8.00 a.m. and found to contain 1000 cells per milliliter. What is generation time in hours?
 - (6) What is pasteurization?
 - (7) Explain the mode of action of UV radiation in sterilization.
- 2 Answer the following: (Each of **02** marks)

14

- (1) What is opsonization?
- (2) How the air born diseases spread?
- (3) Define: Epidemiology.
- (4) Classify the exotoxins.
- (5) Differentiate: Horizontal gene transfer and vertical gene transfer.
- (6) Explain: Phenotypic lag phase.
- (7) Define: Transformation.

	(a) Describe various methods of sterilization with their principles and usefulness.								
	(b)	Describe various methods of Measuring microbial growth and highlight merits and demerits of these methods.							
4	Answer the following: (Each of 07 marks)								
	(a)	(a) Write on the various methods of preservation & maintenance of pure culture.							
	(b)	c) Classify microorganisms on the basis of their mode of nutrition.							
5	Answer the following: (Each of 07 marks)								
	(a) Write a short note on Epidemiology.								
	(b)	Describe various Virulence factors.							
6	Answer the following: (Each of 07 marks)								
	(a)	Define: Infection. Explain the process of infection in brief.							
	(b)	Describe development of competence and transformation in bacteria.							
7	Answer the following: (Each of 07 marks)								
	(a) Explain the molecular basis of mating and transfer of DNA in <i>E. coli</i> .								
	(b)	Discuss recombination and its implications in bacteria.							
8	Answer the following: (Each of 07 marks)								
	(a)	(a) Highlighting the general features of viruses, distinguish DNA and RNA viruses.							
	(b)	Describe the Lytic & Lysogeny cycle in viruses.							

Answer the following: (Each of 07 marks)

3

14

9	Answer	the	following	(Each	of	07	marks)	14
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- (a) Give the structural details for HIV.
- (b) Provide details of reverse transcription process in HIV.
- 10 Answer the following: (Each of 07 marks) 14
 - (a) Write a note on various antibacterial agents and mode of actions.
 - (b) Provide an account on the development of antibiotic resistance.