

18 OCT 2019

B.Sc. Semester – III Examination – October 2019
MICROBIOLOGY

Paper: MIC-CC-303 Microbial Physiology and Metabolism

Paper Code: 20671

Time: 2:30 Hours

Total Marks: 70

Instructions: (a) Figures to the right indicate total marks of respective questions.
(b) Draw neat, clean and labeled diagram wherever necessary.

Q.1(A)	What is an active transport? Explain it by suitable examples.	14
	OR	
Q.1(A) (i)	Enlist seven differences between primary and secondary metabolism.	07
Q.1(A)(ii)	Classify bacteria by their oxygen requirement.	07
Q.1(B)	Short Questions (Attempt any FOUR)	04
	1) Enlist any two energy rich compounds.	
	2) What are symport, antiport and uniport?	
	3) What are halophiles?	
	4) What are the components of an ATP structure?	
	5) Define: Passive diffusion.	
	6) What are psychrophiles?	
Q.2(A)	Explain rules of enzyme nomenclature with suitable examples.	14
	OR	
Q.2(A) (i)	Discuss: Induced fit model.	07
Q.2(A)(ii)	Discuss: Physical and chemical properties of enzymes.	07
Q.2(B)	Short Questions (Attempt any FOUR)	04
	1) Define: Holoenzyme.	
	2) Expand the terms: IUB and IUBMB.	
	3) Enlist any two co-enzymes.	
	4) What are allosteric enzymes?	
	5) Which nature of an enzyme is described by a 'lock and key model'?	
	6) Which is the fifth class of enzyme?	
Q.3(A)	Explain: Methods to measure cell growth.	14
	OR	
Q.3(A) (i)	Differentiate between continuous growth and synchronous growth.	07
Q.3(A)(ii)	Discuss: Role of substrate on growth of microbes.	07
Q.3(B)	Short Questions (Attempt any THREE)	03
	1) Define: Growth.	
	2) Mention alternate names of lag, log, stationary and decline phases.	
	3) What is chemostat?	
	4) Enlist modes of cell division.	
	5) How growth rate can be calculated?	
Q.4(A)	Discuss: Cell-wall inhibiting chemotherapeutic drugs.	14
	OR	
Q.4(A) (i)	Write on: Development of drug resistance.	07
Q.4(A)(ii)	Discuss: Mode of action of sulphonamides.	07
Q.4(B)	Short Questions (Attempt any THREE)	03
	1) Enlist any three protein synthesis inhibiting drugs.	
	2) Which is a parent molecule of all penicillins?	
	3) What is selective toxicity of a drug?	
	4) What is the mode of action of chloramphenicol?	
	5) Name any two anti-fungal antibiotics.	