



DCX-003-2011016

Seat No. _____

B. Sc. (Sem. I) (CBCS) (WEF-2019) Examination

August - 2022

MB-101 : Microbiology

(Fundamentals of Microbiology)

Faculty Code : 003

Subject Code : 2011016

Time : $2\frac{1}{2}$ Hours]

[Total Marks : **70**

- Instructions :** (1) Answer any five questions out of ten.
(2) Figures on right side indicate marks.
(3) Draw the figure wherever necessary.
(4) Write answers of all questions in main answer sheet.

- 1** (a) Objective Type Questions : **4**
(1) Define: Biology
(2) _____ was the first person who recognized tremendous power and potential of microorganisms.
(3) What are harmful activities of microorganisms? (any two)
(4) Who had given five kingdom classification system ?
(b) Answer in brief : **2**
(1) Write about two kingdom classification by Linnaeus.
(c) Answer in detail : **3**
(1) Write a note on Pasteur's test of spontaneous generation.
(d) Write a note on : **5**
(1) Discuss applied area of microbiology.
- 2** (a) Objective Type Questions : **4**
(1) One of the oldest branch of science is _____.
(2) Who had given three kingdom classification ?

	(3) Enlist any two name of branch which include in microbiology.	
	(4) Define: Microbiology.	
(b)	Answer in brief :	2
	(1) What are the contribution of Anthony Van Leeuwenhoek and Louis Joblot?	
(c)	Answer in detail :	3
	(1) Write a note on Francesco Redi and the fly experiment.	
(d)	Write a note on :	5
	(1) Explain five kingdom classifications.	
3	(a) Objective Type Questions :	4
	(1) Define: Microscopy.	
	(2) Anthony Van Leeuwenhoek also known as 'Father of Microscopy'. (TRUE OF FALSE)	
	(3) What is Transmission?	
	(4) What are mordents?	
(b)	Answer in brief :	2
	(1) What are the uses of staining?	
(c)	Answer in detail :	3
	(1) Write a note on Auxochrome.	
(d)	Write a note on :	5
	(1) Discuss in detail about sample preparation for Electron Microscopy.	
4	(a) Objective Type Questions :	4
	(1) What is Antibody?	
	(2) A coloring Agent that is used for general purpose is called a _____.	
	(3) What is Absorptions?	
	(4) Example of acidic stain.	
(b)	Answer in brief :	2
	(1) What are Chromophore ?	
(c)	Answer in detail :	3
	(1) Write a note on Numerical Aperature.	
(d)	Write a note on :	5
	(1) Discuss in detail electron Microscopy.	

- 5 (a) Objective Type Questions : 4
- (1) What is the generation time of *Escherichia coli*?
 - (2) What is Flagella?
 - (3) Define: Exospore.
 - (4) What are three main shapes of bacteria?
- (b) Answer in brief : 2
- (1) What are Conidiospores and Sporangiospores?
- (c) Answer in detail : 3
- (1) Write a note on capsule.
- (d) Write a note on : 5
- (1) Explain in detail bacterial flagella.
- 6 (a) Objective Type Questions : 4
- (1) What is the structure of peptidoglycan?
 - (2) Cyst is produced by the genus _____.
 - (3) Define: Endospores.
 - (4) Stack is non living, ribbon - like and tubular appendage excreted by cells .(TRUE OF FALSE)
- (b) Answer in brief : 2
- (1) What is Chemotaxis ?
- (c) Answer in detail : 3
- (1) Write on cytoplasmic inclusion & vacuoles.
- (d) Answer in detail : 5
- (1) Explain cell wall difference between gram positive and gram negative bacteria.
- 7 (a) Objective Type Questions : 4
- (1) Define: Lyophilization.
 - (2) Facultative anaerobic bacteria do not require O_2 for the growth, may use O_2 for energy production if it is available. (TRUE OF FALSE)
 - (3) Give one example of Mixotrophs.
 - (4) The suspension or the mass of a single type of known bacteria or any other organism is known as _____.
- (b) Answer in brief : 2
- (1) How many types of bacteriological media? (Define any one).

- (c) Answer in brief : 3
 (1) How to get protection against oxygen toxicity?
- (d) Answer in brief : 5
 (1) Explain nutritional requirement of microorganisms.
- 8 (a) Objective Type Questions : 4
 (1) Define: Photolithotrophs.
 (2) Define: Cryopreservation.
 (3) A single carbon or nitrogen source is provided as a substrate that can be utilized by interested organism. This method is known as _____.
 (4) Full form: ATCC.
- (b) Answer in brief : 2
 (1) What are psychrophiles?
- (c) Answer in brief : 3
 (1) Explain pour plate technique.
- (d) Answer in brief : 5
 (1) Discuss in detail about cultural characteristics.
- 9 (a) Objective Type Questions : 4
 (1) Define: Growth.
 (2) Single cell divides after the formation of transverse septum / Cross wall known as _____.
 (3) What is transitory phase?
 (4) $N = Y/vx$,
 Where,
 N = Number of microbial cells per ml.
 $y=?$
 v = Volume of the sample/dilution plated.
 $x=?$
- (b) Answer in brief : 2
 (1) What is Chemostate ?
- (c) Answer in brief : 3
 (1) Write a note on septum formation.
- (d) Answer in brief : 5
 (1) Explain membrane - filter technique and turbidometry methods for measurement of bacterial growth.

- 10** (a) Objective Type Questions : **4**
- (1) Define: Fragmentation.
 - (2) Full form: CFU.
 - (3) Log phase is also known as _____.
 - (4) Give any name of two modes of reproduction in bacteria.
- (b) Answer in brief : **2**
- (1) What is viable count?
- (c) Answer in brief : **3**
- (1) Write a note on coulter counter.
- (d) Answer in brief : **5**
- (1) Discuss in detail about growth curve.
-