

**PARUL UNIVERSITY**  
**FACULTY OF PHARMACY**  
**B. Pharm., Winter 2023-24 Examination**

Semester: 3

Subject Code: BP303T

Subject Name: Pharmaceutical Microbiology

Date: 29/01/2024

Time: 10:00am to 1:00pm

Total Marks: 75

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1	Multiple Choice Questions (MCQs) (1 Mark Each)	(20)	CO	PO	BT
1.	Microorganisms that grow in the absence of oxygen are called:	01	CO1	1-9, 11	BL1
	a) Aerobic				
	b) Microscopic				
	c) Anaerobic				
	d) None of the above				
2	Penicillin was discovered by:	01	CO1	1-9, 11	BL1
	a) R. Koch				
	b) Landsteiner				
	c) Fleming				
	d) E. Jenner				
3	Which of the following scientists is known as the father of modern microbiology?	01	CO1	1-9, 11	BL1
	a) Ruska				
	b) Louis Pasteur				
	c) Loeffler				
	d) E. Jenner				
4	The bacteria which prefer low temperatures (0-22°C) for growth are known as:	01	CO1	1-9, 11	BL1
	a) Thermophilic				
	b) Thermoduric				
	c) Mesophilic				
	d) Psychophilic				
5	Which of the following methods are used for obtaining a pure culture of microorganisms?	01	CO1	1-9, 11	BL1
	a) Streak plate method				
	b) Pour plate method				
	c) Spread plate method				
	d) All of the above				
6	The purpose of simple staining is to demonstrate:	01	CO2	1-4, 6-9, 11	BL1
	a) Cell Size				
	b) Cell shape				
	c) Arrangement of cell				
	d) All of the above				
7	The process of killing microorganisms including spores is:	01	CO2	1-4, 6-9, 11	BL1
	a) Disinfection				
	b) Sanitization				
	c) Sterilization				
	d) Filtration				
8	Best autoclaving is achieved at:	01	CO2	1-4, 6-9, 11	BL1
	a) 121°C for 15 min.				
	b) 120°C for 1 hr.				
	c) 110°C for 2 hr.				
	d) 100°C for 30 min.				
9	Burning to ashes is referred to as:	01	CO2	1-4, 6-9, 11	BL1
	a) Inertization				
	b) Sanitization				
	c) Incineration				
	d) Disinfection				

10	Sterilization by ionization radiation is also known as:		01	CO2	1-4, 6-9, 11	BL1
	a)	Cold-Sterilization	b)	Thermo-Sterilization		
	c)	Electro-Sterilization	d)	None of the above		
11	Fungi belong to which of the following categories:		01	CO3	1-9, 11	BL1
	a)	Autotrophs	b)	Chemoautotrophs		
	c)	Chemotrophs	d)	Phagotrophs		
12	Which of the following is not a sexual spore?		01	CO3	1-9, 11	BL1
	a)	Zoospore	b)	Zygospore		
	c)	Ascospore	d)	Basidiospore		

13	Potassium permanganate is used in:		01	CO3	1-9, 11	BL1
	a)	Vaccine bath	b)	Serum bath		
	c)	Seitz bath	d)	None of the above		
14	The chemical disinfectant used in drinking water is:		01	CO3	1-9, 11	BL1
	a)	Chlorine	b)	Phenol		
	c)	Alcohol	d)	Iodine		
15	Test based on the rise of body temperature of rabbits is:		01	CO3	1-9, 11	BL1
	a)	Sterility Test	b)	Pyrogen Test		
	c)	MIC Test	d)	All of the above		
16	The surface sample method using a sterile cotton swab tip to sample location is:		01	CO4	1-4, 6-8, 11	BL1
	a)	Rodac plate test	b)	Swab rinse test		
	c)	Biotest	d)	None of the above		
17	The settle plate method is also known as:		01	CO4	1-4, 6-8, 11	BL1
	a)	Spread plate method	b)	Floatation method		
	c)	Pour plate method	d)	Sedimentation method		
18	The total aerobic microbial count present in the test substance is determined as per I.P. by the following methods except:		01	CO4	1-4, 6-8, 11	BL1
	a)	Membrane filtration	b)	Total plate count		
	c)	Most probable number	d)	Turbidimetric method		
19	Which of the following mould is used for the preservative efficacy test?		01	CO4	1-4, 6-8, 11	BL1
	a)	Aspergillus brasiliensis	b)	Bacillus subtilis		
	c)	Aspergillus niger	d)	Candida albicans		
20	When a finite cell line undergoes transformation and acquires the ability to divide indefinitely, it becomes:		01	CO4	1-4, 6-8, 11	BL1
	a)	Continuous cell line	b)	Discontinuous cell line		
	c)	Infinite cell line	d)	Both B & C		

Seat No: \_\_\_\_\_

Enrollment No: \_\_\_\_\_

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<b>Q.2</b>	<b>Long Answers (any 2 out of 3) (10 Mark Each)</b>	<b>(20)</b>	<b>CO</b>	<b>PO</b>	<b>BT</b>
1.	Explain the bacterial growth curve. What are the various physical factors affecting the growth of bacteria?	10	CO1	1-9, 11	BL2
2.	What do you mean by sterility testing? Explain methods used for the determination of sterility. Also, describe the test for pyrogen.	10	CO3	1-9, 11	BL2
3.	Define animal cell culture. Explain in detail primary and secondary cell culture techniques.	10	CO4	1-4, 6-8, 11	BL2

<b>Q.3</b>	<b>Short Answers (any 7 out of 9) (5 Mark Each)</b>	<b>(35)</b>	<b>CO</b>	<b>PO</b>	<b>BT</b>
1.	What is medicinal microbiology? Explain the application & scope of it in pharmaceutical microbiology.	05	CO1	1-9, 11	BL2
2.	Classify bacteria on the basis of morphological features.	05	CO1	1-9, 11	BL2
3.	Explain MR-VP tests used for the identification of bacteria.	05	CO2	1-4, 6-8, 11	BL2
4.	Explain the procedure, merits, and demerits of membrane filtration.	05	CO2	1-4, 6-8, 11	BL2
5.	Define the following terms: disinfection, disinfectant, antiseptic, bacteriostatic, and bactericidal.	05	CO3	1-9, 11	BL1
6.	Explain in detail about the virus with its classification.	05	CO3	1-9, 11	BL2
7.	Define the aseptic area and mention the various sources of contamination and preventive measures to be taken in the aseptic area.	05	CO4	1-4, 6-8, 11	BL1
8.	Define food Spoilage. Explain the methods of preservation of spoilage.	05	CO4	1-4, 6-8, 11	BL2
9.	Define sterilization. Explain the sterilization by radiation.	05	CO2	1-4, 6-9, 11	BL2