Total No. of Questions: 3 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Pharmacy
End Sem Examination Dec 2024
PY3CO11 Pharmaceutical Microbiology

Programme: B. Pharm. Branch/Specialisation: Pharmacy

Duration: 3 Hrs. **Maximum Marks: 75**

Note: All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.

			Marks	BL	PO	CO	PSO
Q.1	i.	Give any two advantages of electron microscopy.	**2**	2	1	1	
	ii.	Write the essential component of nutritive broth media.	**2**	2	1	1	
	iii.	Gram staining technique was introduced by which scientist?	**2**	1	2	1	
	iv.	Give an example of "Coccus" and "Bacillus" bacteria.	**2**	1	2	1	
	v.	Define the bacteriostatic and bacteriocidal	**2**	2	3	1,10	
	vi.	Define the virus and bacteria.	**2**	1	3	1	
	vii.	What is class 100?	**2**	2	4	1	
	viii.	Give the ideal autoclave condition for moist sterilization.	**2**	3	4	10	
	ix.	What is primary culture?	**2**	1	5	10	
	x.	Give the name of any two microbes causing spoilage of pharmaceuticals.	**2**	1	5	1,10	
Q.2		Attempt any two:					
	i.	Define the pure culture and its isolation methods. Describe any two techniques for preserving bacteria.	**10**	2	1	10	
	ii.	Describe the principle and applications of physical, chemical, gaseous and radiation method of sterilization.	**10**	3	2	1,10	
	iii.	(a) Write the difference between prokaryotes and eukaryotes.	**5**	4,3	1,2	1,1	
		(b) Name the different staining techniques and give their particular applications.	**5**	4,3	1,2	1,1	

P.T.O.

			Marks	BL	PO	CO	PSO
Q.3		Attempt any seven: Two questions from each section is compulsory.					
		Section - A					
	i.	Explain the membrane filtration test for sterility with observation and interpretation of results.	**5**	3	3	10	
	ii.	Give classification and the morphology of fungi.	**5**	2	3	1	
	iii.	Write the classification and any one cultivation method of virus.	**5**	2	3	10	
		Section - B					
	iv.	Describe the methods for standardization of antibiotics.	**5**	2	4	10	
	v.	Define the cleaning area and classification of cleanroom.	**5**	2	4	10	
	vi.	Write the types of laminar flow cabinets and its uses.	**5**	1	4	1,10	
		Section - C					
	vii.	Explain the various factors, affecting microbial spoilage of pharmaceutical products.	**5**	2	5	1,10	
	viii.	Define the cell culture. Give the merits, demerits and application of cell culture.	**5**	4	5	10	
	ix.	Explain the methods of preservation of pharmaceutical products.	**5**	3	5	10	

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Marking Scheme
PY3CO11 - Pharmaceutical Microbiology

Q.1	i)	Very high vacuum and drying process alter the morphology	**2**
	ii)	Beef extract and peptones.	**2**
	iii)	Christian Gram in 1884	**2**
	iv)	Staphylococcus and lactobacillus	**2**
	v)	Bacteriostatic (1 mark) and bactericidal (1 marks)	**2**
	vi)	virus (1 marks) Bacteria (1 marks)	**2**
	vii)	Critical area, maximum particles number 100(0.5) **particles- 0.5mm** **maximum particles – 100 per**	**2**
	viii)	121 ℃, 15 lb per sq. Inch for 15 minutes	**2**
	ix)	Definition	**2**
	x)	Name any two microorganisms. 1 mark each	**2**

Q.2 Attempt any two:

i.	Definition (2 marks), pure culture isolation methods (4 marks), two bacterial preservation methods (4 marks)	**10**
ii.	Physical, chemical, gaseous and radiation (2.5X 4)	**10**
iii.	(a). Any five difference	**5**
	(b.) Staining techniques (2.5 marks) and applications (2.5 marks)	**5**

Q.3 Attempt any seven: Two questions from each section is compulsory.

Section - A

i.	Membrane filtration method (3 Marks) observation and interpretation (2 marks)	**5**
ii.	Classification (2 marks) Morphology (3 marks)	**5**
iii.	Classification (2 Marks) Cultivation: chick embryo or cell culture (3 marks)	**5**

Section - B

iv.	Cup-plate method and Turbidimetric method (2.5 marks each)	**5**
v.	Definition (1 mark) classification of cleanroom (4 marks)	**5**

vi.	Horizontal type and vertical type (1.5X2 = 3 marks) Uses (2 marks)	**5**

Section - C

vii.	Any five factors (5 marks)	**5**
viii.	Definition, merits and demerits (1x 3 = 3) Applications (2 marks)	**5**
ix.	Any five methods (like drying, temperature, osmotic, chemical, radiation) (1x 5 = 5) marks	**5**

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