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Enrollment No.....



Faculty of Pharmacy  
End Sem (Odd) Examination Dec-2022  
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.

- Q.1
- What are different shapes of bacteria? 2
  - Enlist nutritional requirements of bacteria. 2
  - Name any four staining techniques of bacteria. 2
  - Write any four methods of sterilization. 2
  - Define the term bacteriostatic and bactericidal. 2
  - What are different medias for sterility testing? 2
  - Explain HEPA filter. 2
  - Write any four features of aseptic area. 2
  - What are different types of spoilage? 2
  - Enlist different types of cell culture. 2
- Q.2
- Attempt any two:
- Write a note on nutritional requirements of bacteria. 10
  - Define staining. Explain types of staining in detail. 10
  - (a) Write a note on isolation and preservation of bacteria. 5  
(b) Classify different types of sterilization method and explain any two. 5
- Q.3
- Attempt any seven: Two questions from each section is compulsory.

Section - A

- Write a note on sterility testing as per I.P. 5
- What are factors affecting disinfection? 5
- Write a note on morphology, types and reproduction of fungi. 5

P.T.O.

Section - B

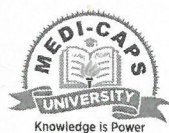
- Write a note on microbial assay of antibiotics. 5
- What are key features of aseptic area? 5
- Write a note on principle and working of Laminar air flow unit with neat, labelled diagram. 5

Section - C

- What are types of spoilage? Write a note on factors affecting the microbial spoilage of pharmaceutical products. 5
- How the amicrobial contamination and spoilage is assessed? 5
- Write a procedure for cell culture. How animal cell grow in the culture? 5

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## Scheme of Marking



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**Note: The Paper Setter should provide the answer wise splitting of the marks in the scheme below.**

Q.1	i)	Four shapes. Each shape 0.5 marks	2
	ii)	Each requirement 0.5 marks	2
	iii)	Four techniques, each 0.5 marks	2
	iv)	Each method , 0.5 marks	2
	v)	It means to stop the growth of microorganism	2
	vi)	Two media, 1 mark each	2
	vii)	High efficiency particulate air filter	2
	viii)	Each Feature 0.5 marks	2
	ix)	Each type 0.5 marks	2
	x)	Each culture, 1 mark.	2
Q.2		Attempt any two:	
	i.	nutritional requirements of Bacteria. Each requirement 2 marks	10
	ii.	Staining definition 2 marks. 4 types in detail 2 marks each	10
	iii. a	Isolation 2.5 marks Preservation 2.5 marks	5
	b	Classification- 1 mark Explanation- 1 method- 2marks	5
Q.3		Attempt any seven: Two questions from each section is compulsory.	
Section - A			
	i	Introduction and reason – 1mark Preparation of media – 2 marks Procedure and interpretation- 2 marks	5

		Each factor- 1 mark	
		Morphology- 2 marks types- 1 marks and reproduction- 2 marks	
Section - B			
	i.	Principle- 2 marks Method- 2marks Result and interpretation- 2 marks	5
	ii.	Each feature 1 mark. Have to explain in detail	5
	iii.	Principle – 2 marks, working– 1marks neat labelled diagram – 2 marks	5
Section - C			
	iv.	types of spoilage- 2 marks and factors affecting the microbial spoilage of pharmaceutical products. - 3 marks	5
	v.	Assessment – each method 1 mark	5
	vi.	Procedure- 2 .5 marks How animal cell grows in the culture- 2.5 marks	5

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