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

Enrollment No.....

Faculty of Pharmacy
End Sem Examination Dec-2023
PY3CO29 Instrumental Methods of Analysis

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.

Q.1	i.	Define Spectroscopy.	**2**
	ii.	Enlist detectors used in UV Spectrophotometer.	**2**
	iii.	Write applications of nepheloturbidimetry.	**2**
	iv.	Write about the stretching phenomenon in IR Spectroscopy.	**2**
	v.	Define Chromatography.	**2**
	vi.	What is electrophoresis?	**2**
	vii.	Write about mobile phases used in gas chromatography.	**2**
	viii.	What is isocratic elution.	**2**
	ix.	What do you mean by affinity with respect to Chromatography?	**2**
	x.	Write about ion exchange resins.	**2**
Q.2		Attempt any two:	
	i.	Explain the principle and Instrumentation of the UV Spectrophotometer.	**10**
	ii.	Explain the Quenching phenomenon. Write Instrumentations and application of fluorometry.	**10**
	iii.	(a) Explain applications of UV spectroscopy with examples.	**5**
		(b) Describe factors affecting fluorescence with some examples.	**5**
Q.3		Attempt any seven: Two questions from each section is compulsory.	
		Section - A	
	i.	What are the different types of chromatographic techniques?	**5**
	ii.	Explain the principle of chromatography in detail.	**5**

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	iii.	Differentiate between paper and thin-layer chromatography.	**5**
		Section - B	
	iv.	Wite about derivatization in gas chromatography.	**5**
	v.	What is Reverse phase chromatography? Write applications of HPLC.	**5**
	vi.	Explain the instrumentation of Gas Chromatography.	**5**
		Section - C	
	vii.	What are the applications of ion exchange chromatography? Write the mechanism of the ion exchange process.	**5**
	viii.	Write theory and instrumentation of gel chromatography.	**5**
	ix.	How affinity chromatography is different from ion exchange chromatography. Elaborate it.	**5**

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PY3CO29 - Instrumental method of analysis

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	iv)	Write about the stretching phenomenon in IR Spectroscopy.	**2**
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	vii)	Write about mobile phases used in gas chromatography.	**2**
	viii)	What is isocratic elution.	**2**
	ix)	What do you mean by affinity with respect to Chromatography?	**2**
	x)	Write about ion exchange resins.	**2**

	iii.	Differentiate……chromatography.	(1 Mark*5)	**5**
		Section – B		
	iv.	Derivatization in gas chromatography.	(As per explanation)	**5**
	v.	Reverse phase chromatography	2 Marks	**5**
		Applications of HPLC.	3 Marks	
	vi.	The instrumentation ….Chromatography.	(As per explanation)	**5**
		Section - C		
	vii.	Applications of ion exchange chromatography	2 Marks	**5**
		The mechanism of the ion exchange process.	3 Marks	
	viii.	Theory	2 Marks	**5**
		Instrumentation of gel chromatography.	3 Marks	
	ix.	Affinity chromatography……. ……. Elaborate it.	(As per explanation)	**5**

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Q.2 Attempt any two:

i.	Principle		4 Marks	**10**
	Instrumentation		6 Marks	
ii.	Quenching		3 Marks.	**10**
	Instrumentations		4 Marks	
	Application		3 Marks	
iii.	Applications of UV		3 Marks	**5**
	Examples		2 Marks	
	Factors affecting fluorescence		3 Marks	**5**
	Examples		2 Marks	
i.	Different types of chromatography	5 types	(1 Marks *5)	**5**
ii.	Principle of chromatography in detail.		(As per explanation)	**5**