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

Enrollment No.....

Faculty of Pharmacy

End Sem (Odd) Examination Dec-2022

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.

Q.1	i.	Define auxochrome and chromophore.	**2**
	ii.	What is quenching? Give example.	**2**
	iii.	Write any two differences between nephelometery and turbidimetery.	**2**
	iv.	Mention the types of interferences in atomic absorption spectroscopy.	**2**
	v.	What is the basic principle of electrophoresis?	**2**
	vi.	Define thin layer chromatography.	**2**
	vii.	Define gas chromatography. Mention any two gases used as mobile phase in gas chromatography.	**2**
	viii.	Draw flow diagram of HPLC system.	**2**
	ix.	Discuss the principle involved in separations by gel chromatography	**2**
	x.	Define cation and anion exchange resin	**2**
Q.2		Attempt any two:	
	i.	Draw a schematic diagram of UV visible spectrophotometer. Explain in detail the detectors of UV visible spectroscopy.	**10**
	ii.	Explain the principle, instrumentation and applications of IR spectroscopy.	**10**
	iii.	Explain various factors affecting fluorescence spectroscopy.	**5**
		Write a note on flame photometer.	**5**

P.T.O.

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

Section - A

	i.	Enlist and explain various development techniques in Paper chromatography.	**5**
	ii.	Explain various steps involved in the separation of samples by column chromatography.	**5**
	iii.	What is electrophoresis? Explain the factors affecting electrophoresis.	**5**

Section - B

	iv.	Write construction and working of any two gas chromatography detectors.	**5**
	v.	Enlist various advantages and disadvantages of gas chromatography.	**5**
	vi.	Explain instrumentation of high-performance liquid chromatography with block diagram.	**5**

Section - C

	vii.	Define and classify ion exchange resins. Add a note on factors affecting ion exchange.	**5**
	viii.	Explain principle and theory of affinity chromatography.	**5**
	ix.	Write a note on instrumentation of gel chromatography.	**5**

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Scheme of Marking

Faculty of Pharmacy

End Sem (Odd) Examination Dec-2022

PY3CO29 Intrumental method of analysis

Programme: B. Pharma | Branch/Specialisation:

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

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

Q.1	i)	Define Auxochrome and 1 mark Chromophore 1 mark	**2**
	ii)	What is Quenching? 1 mark Give example 1 mark	**2**
	iii)	Write the difference between nephelometery and turbidimetery.	**2**
	iv)	Mention the types of interferences in atomic absorption spectroscopy	**2**
	v)	What is the basic principle of electrophoresis?	**2**
	vi)	Define thin layer chromatography.	**2**
	vii)	Define Gas Chromatography. 1 mark What are the gases used as mobile phase in Gas Chromatography. 1 mark	**2**
	viii)	Draw flow diagram of HPLC system	**2**
	ix)	Discuss the principle involved in separations by gel chromatography	**2**
	x)	Define cation and 1 mark anion exchange resin 1 marks	**2**
Q.2		Attempt any two:	
	i.	Draw a schematic diagram of UV Visible Spectrophotometer 3 marks Explain in detail the detectors of UV Visible Spectroscopy. 7 marks	**10**
	ii.	Explain the Principle, 2 marks Instrumentation and 5 marks applications of IR Spectroscopy. 3 marks	**10**
	iii.	Explain various factors affecting fluorescence spectroscopy.	**5**
		Write a note on Flame Photometer.	**5**
Q.3		Attempt any seven: Two questions from each section is compulsory.	
		Section - A	
	i.	Enlist and 1 mark explain various development techniques in Paper chromatography. 4 marks	**5**
	ii.	Explain various steps involved in the separation of samples by column chromatography.	**5**
	iii.	What is electrophoresis? 1 mark Explain the factors affecting electrophoresis. 4 mark	**5**
		Section – B	
	iv.	Write construction and working of any two Gas chromatography detectors. (2.5 +2.5)	**5**
	v.	Enlist various advantages 2.5 marks and disadvantages of Gas Chromatography. 2.5 marks	**5**
	vi.	Explain instrumentation of High-performance Liquid Chromatography 3 marks with block diagram 2 marks	**5**
		Section – C	
	vii.	Define 1 mark and classify Ion Exchange resins. 1 mark Add a note on factors affecting Ion exchange. 3 marks	**5**
	viii.	Explain principle and 2 marks theory of affinity chromatography. 3 marks	**5**
	ix.	Write a note on instrumentation of gel chromatography.	**5**

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