	SanjayGhodawatUniversity,Kolhapur EstablishedasStatePrivateUniversityunder Govt.ofMaharashtra.ActNo XL,2017	2022-2023 EXM/P/09/00

Year and Program **Final Year B. Pharm**	**School of Pharmaceutical Sciences**	**Department:Pharmacy**
Course Code: BP701T	**Course Title: Instrumental Methods of Analysis**	**Semester –VII**
Date: 24-12-2022 **Day: Saturday** **Time: 10:30am -1:30 pm**	**Examination: End Semester**	**Max Marks:75**

Instructions: 1) All questions are compulsory.
2) Draw a neat labeled diagram if necessary.

			Marks	Bloom's Level	CO
Q.1		**Objective Type Questions (10X2)**	**20**		
	a)	Define chromophore and auxochrome.	02	1	1
	b)	Write two differences between fluorescence and phosphorescence.	02	4	5
	c)	Give the principle of IR spectroscopy.	02	2	3
	d)	Write the role of flame atomizer in flame photometry.	02	2	3
	e)	What is temperature programming in gas chromatography?	02	1	2
	f)	Enlist the natural and synthetic gels used in gel chromatography.	02	1	2
	g)	Give the principle of HPLC.	02	1	2
	h)	What are different types of HPLC?	02	2	2
	i)	Give two examples each of anion and cation exchange resins.	02	1	4
	j)	What is derivatization? Enlist the various methods of derivatization in gas chromatography.	02	1	2
Q.2		**Long Answers (Answer 2 out of 3)**	**20**		
	a)	Explain the principle, instrumentation and applications of UV Visible spectroscopy.	10	1	3
	b)	Describe the principle, interferences and applications of Atomic Absorption Spectroscopy	10	1	3
	c)	Discuss the practical requirements, development techniques and visualizing methods of TLC.	10	2	2

ESE

Q3		Short Answers (Answer 7 out of 9)	35	Bloom's Level	CO
	a)	Explain Beers Lambert's law along with its derivation.	05	1	3
	b)	What are Nephelometry and turbidometry? Write principle involved for the same.	05	1	3
	c)	Define and classify chromatography with suitable example.	05	4	1
	d)	Write a note on gel electrophoresis.	05	2	2
	e)	Explain the type of GC columns and carrier gases.	05	1	2
	f)	Give the instrumentation of HPLC with well labelled block diagram.	05	3	2
	g)	What are ion exchange resins? Give their classification and explain the ideal properties of ion exchange resins.	05	2	2
	h)	Write the practical steps involved in size exclusion gel chromatography.	05	2	2
	i)	Discuss the principle, instrumentation and applications of affinity chromatography.	05	2	2