PRN:		Course Code:	USS 402

Second Year **B.Sc** End Semester Examination Summer 2024

Analytical Chemistry IV

Day and Date: 24 MAY 2024, Friday Max Marks: **100**

Time: 2:00 to 5:00 pm Duration: **03** hrs

Instructions: 1) All questions are compulsory.

2) Use of log table and Scientific Calculator is allowed

		Marks	Bloom's Level	CLO
Q.1	**Attempt the following**	**25**		
a)	Define error. Discuss types of error with suitable examples.	08	L2	CLO1
b)	State and explain arithmetic mean. Find the arithmetic mean of the first seven natural numbers.	08	L3	CLO1
c)	State and explain median. Find the median of the following data. 26,35,32,24,23,27,36,29,21,33.	09	L3	CLO1
	OR			
d)	What is sampling? Discuss the techniques of sampling of gases, fluids, solids with examples.	09	L2	CLO1
Q.2	**Attempt the following**	**25**		
a)	What are electromagnetic radiations? Discuss characteristics of electromagnetic radiations.	08	L2	CLO2
b)	State the Beer's-Lambert's law and explain the limitations of this law.	08	L2	CLO2
c)	Discuss the instrumentation of single beam UV-visible spectrometer.	09		CLO2
	OR			
d)	Give the basic principle of atomic absorption spectrometer and explain instrumentation of AAS with neat schematic diagram.	09	L2	CLO2
Q.3	**Attempt the following**	**25**		
a)	Write principle, methodology and applications of thin layer chromatography.	08	L2	CLO3
b)	Discuss the determination of equivalence point of strong acid vs strong base by using pH metric titration.	08	L2	CLO3
c)	Discuss the determination of equivalence point of strong acid vs weak base by using conductometric titration.	09	L2	CLO3
	OR			

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d)	Discuss the nature of conductometric graph between titration of weak base and weak acid giving some example.	09	L2	CLO3

Q.4 **Attempt the following** **25**

a)	Define accuracy and precision. Explain the methods of expression of accuracy and precision.	08	L2	CLO1
b)	Write a note on monochromator and detector used in UV-visible spectrometer.	08	L1	CLO2
c)	Discuss classical and analytical methods used in potentiometric titration.	09	L2	CLO3

OR

d)	What is chromatography? Explain principle, working and applications of paper chromatography with suitable diagram.	09	L2	CLO3

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