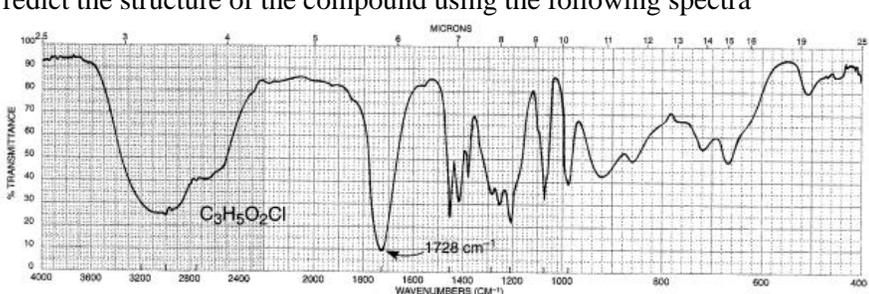


Name:			
Enrolment No:			
<b>UPES</b> <b>End semester Examination, December 2023</b>			
<b>Course: Instrumental Methods of Analysis</b> <b>Program: B.Pharm</b> <b>Course Code: BP701T</b> <b>Instructions: Read the Question Paper Carefully.</b>		<b>Semester: VII</b> <b>Time 03 hr</b> <b>Max. Marks: 75</b>	
<b>SECTION A</b> <b>(20Qx1M=20 Marks)</b>			
S. No.		Marks	Cos
Q1	What is the effect of rigidity on fluorescence in spectrofluorimetry?	1	CO2
Q2	What is the cut off value of water in nm (i.e., water does not UV rays absorb above what value)? a. 270 b. 254 c. 190 d. 220	1	CO1
Q3	Refractive index detector cannot be used with gradient elution. True/False.	1	CO4
Q4	What is Normal phase chromatography?	1	CO4
Q5	Name an example of strong anion exchange resin in ion exchange chromatography.	1	CO4
Q6	What is the range of Vacuum UV? a. 200-300nm b. 10-200nm c. 300-400nm d. 400-700nm	1	CO1
Q7	Which gas is not used in gas chromatography ? a. Nitrogen b. Helium c. Methane d. Hydrogen	1	CO3
Q8	What do you mean by dynamic quenching ?	1	CO2
Q9	Anionic interferences are observed in flame emission spectroscopy but not in atomic adsorption spectroscopy. True/ False.	1	CO5
Q10	Is LC-MS a spectroscopic or chromatographic technique?	1	CO5
Q11	Give one application of nephloturbidometric analysis.	1	CO5
Q12	Which of the following is an important condition for a compound to be UV active? a. Conjugation b. Dipole c. moment d. Unsaturation	1	CO1
Q13	At what frequency (cm <sup>-1</sup> ) amines show a strong band in IR. a. 1550	1	CO1

	b. 1660 c. 2820 d. 3400		
Q14	What is the angle between primary and secondary filter in fluorimeter?	1	CO3
Q15	Full form of WCOT is _____ .	1	CO4
Q16	Name any one detector used in Gas chromatography for analysis of pesticides.	1	CO3
Q17	Write Beer's law.	1	CO1
Q18	If transmittance is 10%. What would be the reading of absorbance in UV spectroscopy.	1	CO1
Q19	Which stationary phase is used in gel filtration chromatography?	1	CO3
Q20	Name a derivatizing reagent used in TLC.	1	CO3

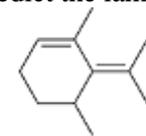
**SECTION B (20 Marks)**  
**(2Qx10M=20 Marks)**

**Attempt 2 Question out of 3**

Q1	Discuss different detectors used in HPLC.	10	CO1
Q2	Describe the following terms : a. Gradient elution b. Temperature programming c. Retention time d. HETP	10	CO4
Q3	Predict the structure of the compound using the following spectra 	10	CO2

**SECTION-C (35 Marks)**  
**(7Qx5M=35 Marks)**

**Attempt 7 Question out of 9**

Q1	Write about any two detectors of HPLC chromatography.	5	CO2
Q2	Mention any 3 factors that affect lambda max in UV spectroscopy.	5	CO2
Q3	Write about different step that occur in atomic absorption spectroscopy.	5	CO2
Q4	Draw the graph for Van-Deemter equation and label it.	5	CO4
Q5	Draw and label Jablonski diagram.	5	CO3
Q6	Predict the lambda max of the following compound. 	5	CO3
Q7	Explain the applications of chromatography.	5	CO4

Q8	Write 2 applications of capillary electrophoresis.	5	CO5
Q9	Discuss the application of UV spectroscopy.	5	CO4