GUJARAT TECHNOLOGICAL UNIVERSITY B. Pharm. - SEMESTER - VII • EXAMINATION - WINTER • 2016

Subject Code: 270004 Date: 23-11-2016 **Subject Name: Pharmaceutical Analysis-III** Time: 10:30 am - 01:30 pm **Total Marks: 80 Instructions:** 1. Attempt any five questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. Explain theory and types of Electronic transition involved in absorption of UV (a) **06** radiation by molecule. Give their characteristic wavelength. **(b)** State Beer's-Lambert's Law of photometry and derive equation A = a b c. 05 Ten milligrams of a compound "X" (M.Wt 151) is present per liter of solution. 05 (c) If molar absorptivity of "X" at 257 nm is 10625, what will be absorbance in the solution of "X" at 257 nm in 1 cm cell? Draw labelled sketch of a double beam UV-VIS spectrophotometer. Describe 06 (a)

	(b) (c)	Explain theory of absorption of Infrared radiation. Explain HOOK'S LAW for prediction of IR frequency. Discuss factor affecting IR frequency.	05 05
) .3	(a)	What is fluorescence? Explain Florescence and phosphorescence using Jablonski diagram.	06
	(b)	Differentiate UV and Fluorescence Spectroscopy.	05

	(U)	Differentiate 0 v and Fuorescence Spectroscopy.	03
	(c)	Discuss factors affecting fluorescence.	05
4	(a)	Explain working principle of Flame photometer with diagram.	06
	(b)	Explain principle of Inductively Coupled plasma emission spectroscopy.	05

Enlist advantage, limitation and application of atomic absorption spectroscopy. (c) Explain Nuclear Magnetic Resonance and Spin lattice relaxation in ¹HNMR. **(a)**

05 A molecule $C_6H_{12}O$ is Ketone with following ¹HNMR spectral data. Elucidate 05 (c) the structure. Chemical shift (splitting) δ 2.25(singlet), 2.45 (triplet), 1.6(quintet), 1.35(Sextet), 0.9 Triplet

Explain principle involved in mass spectroscopy. 06 **(a)** Enumerate methods of Ionization in Mass Spectroscopy. Explain any one. 05 **(b)** (c) Explain origin and application of Molecular Ion, M+1, M+2 and Base Peak in 05 Mass Spectroscopy.

- Write note on preparation of sample for IR spectroscopy. 06 (a) Write note on ¹³C NMR. **(b)** 05 05
 - (c)

0.1 Q.2 working of Photo Multiplier Tube. Q Differentiate UV and Eluorescence Spectroscopy (\mathbf{h}) Q. xplaii ly Co (D) ру Q.5 What is chemical shift in NMR? Explain factor affecting it. **(b)** Q. 6 **Q.7** Explain advantages and principle involved in FTIR spectrophotometry.

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