Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM – SEMESTER – 5- EXAMINATION –WINTER - 2018

Subject Code:2250003 **Date: 27/11/2018**

Subject Name: Pharmaceutical Analysis III

Time:10:30 AM TO 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.**

Q.1	**(a)**	Classify Spectroscopy. Define Line Spectra, Isosbestic point and Stray Light.	**06**
	(b)	State and Explain Lambert–Beer's Law with factors causing deviation from law.	**05**
	(c)	Write a Short Note on: (i) Gratings (ii) Simultaneous Equation Method	**05**
Q.2	**(a)**	Explain different types of Stretching & Bending Vibrations in IR Spectroscopy.	**06**
	(b)	Differentiate Dispersive IR and FT IR.	**05**
	(c)	Write a Short Note on: (i) Finger Print Region (ii) Sample Preparation Techniques.	**05**
Q.3	**(a)**	Enlist Ionisation Techniques in Mass Specroscopy. Explain any two in detail.	**06**
	(b)	Give a brief account of Mc Lafferty Rearrangement & TOF Mass Analyser.	**05**
	(c)	Explain different types of peaks observed in Mass spectrum.	**05**
Q.4	**(a)**	Describe principle & instrumentation of NMR Spectroscopy.	**06**
	(b)	Define Chemical Shift. Give factors affecting Chemical shift.	**05**
	(c)	Explain Spin splitting, Spin-Spin coupling & Coupling Constant.	**05**
Q.5	**(a)**	Explain working principle of Fluorimeter with well labeled diagram.	**06**
	(b)	Differentiate Fluorescence & Phosphorescence. Draw & explain Jablonski Diagram.	**05**
	(c)	Explain in brief factors affecting Fluorescence Intensity.	**05**
Q. 6	**(a)**	Describe Qualitative and Quantitative applications of UV-Visible Spectroscopy.	**06**
	(b)	Enlist Radiation Sources & Detectors used in IR Spectrosopy. Explain any one detector in detail.	**05**
	(c)	Differentiate AAS and AES.	**05**
Q.7	**(a)**	Explain working principle of Flame Photometer with labeled diagram.	**06**
	(b)	Comment on following:	**05**

(i) Fluorescence Spectroscopy is more sensitive than UV-Visible Spectroscopy.

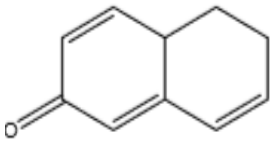
(ii) Base peak in mass spectrum is peak of highest mass.

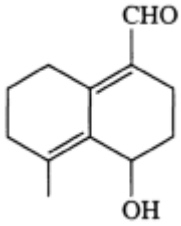
(iii) C^{13} NMR spectra are more difficult to record than H-NMR.

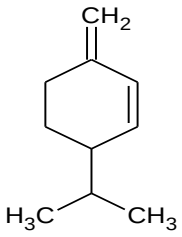
(iv) Fluorescence occur at shorter wavelength than Absorbance.

(v) J value does not depend on applied magnetic field.

(c) Give λmax value of following compounds. **05**







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