

FINAL YEAR B.PHARM. SEMESTER-VII (2011 COURSE) :
SUMMER - 2018

SUBJECT : PHARMACEUTICAL ANALYSIS – V

Day : Tuesday
Date : 24/04/2018

S-2018-3977

Time : 02.00 PM TO 05.00 PM
Max. Marks : 80

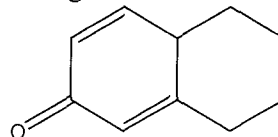
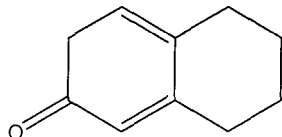
N.B.

- 1) Q.1 and Q.5 are **COMPULSORY**. Out of the remaining attempt any **TWO** questions from Section – I and any **TWO** questions from Section – II.
- 2) Answers to the two sections should be written in **SEPARATE** answer book.
- 3) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 Answer any **FIVE** of the following (10)

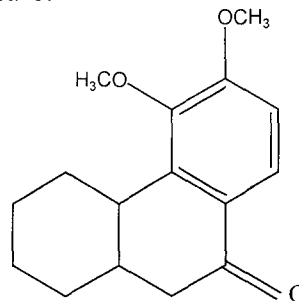
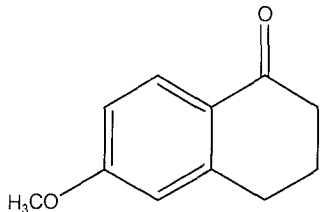
- a) Define wave number and frequency.
- b) Explain concept of Instrumental Analysis.
- c) Define the term chromophore.
- d) Differentiate the following structures using Woodward Fiser rule.



- e) Explain 'Holographic gratings'.
- f) List out properties of molecules used for instrumental analysis.

Q.2 a) Write the effect of conjugation on λ_{max} , explain with examples. (08)

b) Predict λ_{max} for the following structure. (07)



Q.3 a) Explain the construction working and advantages of PMT. (08)

b) List out dispersive elements used in spectral instrumentation and describe in detail 'gratings'. (07)

Q.4 Write short notes on any **THREE** of the following: (15)

- a) Woodward Fisers rule for enones.
- b) Classification of instrumental methods of analysis with types of atomic and molecular interactions.
- c) Raman spectroscopy
- d) Quantitative analysis by UV spectroscopy.

P.T.O.

SECTION – II

Q.5 Answer any **FIVE** of the following **(10)**

- a) Write the basic requirement of a molecule to be IR active.
- b) List out factors affecting fluorescence.
- c) Calculate the vibrational degrees of freedom of a linear molecule with 10 atoms.
- d) Explain the principle of phosphorimetry.
- e) List out the detectors used in IR spectroscopy.
- f) Advantages of Raman spectroscopy over IR spectroscopy

Q.6 a) How IR spectroscopy is useful to distinguish following structures **(08)**

- i) $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CH}_2\text{OH}$ $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-C}\begin{matrix} \text{O} \\ \parallel \\ \text{H} \end{matrix}$
- ii) $\text{CH}_2\text{=CH-CH=CH}_2$ $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CH}_3$

b) Write a note on molecular vibrations **(07)**

Q.7 Explain in details instrumentation, advantages and disadvantages of fluorimetry **(15)**

Q.8 Write short notes on any **THREE** of the following: **(15)**

- a) Principle and applications of turbidimetry
- b) Necessary conditions for quantitation by nepheloturbidometry
- c) Sampling methods by IR spectroscopy
- d) Compare nephelometry, turbidometry and UV spectrometry

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