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M PHARM

(SEM I) THEORY EXAMINATION 2017-18

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. Assume any missing data if any.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a. Define Beer Lambert equation.
b. What is chromophore? How they are different from auxochromes?
c. Differentiate between stretching and bending.
d. How FT-IR different from dispersive IR.
e. Explain the splitting of signals pattern in 1H NMR.
f. How partition chromatography different from adsorption chromatography?
g. Define electrophoresis with suitable example.
h. What are the different types of paper chromatography?
i. What do you mean by HETP?
j. How shielding effect different from deshielding effect.

SECTION B

2. Attempt any *two* of the following: 2 x 10 = 20

a. Discuss the detail description of principle, theory, instrumentation and application of HPLC.
b. What is the different method thermal analysis? Explain the instrumentation and pharmaceutical application of DSC.
c. Explain why
i) Amines absorb at high wavelength in comparison to alcohol in UV.
ii) Reverse phase chromatography is more commonly used in analysis of drugs and pharmaceuticals.
iii) Mass is not obtained for sugars using EI source but it can be obtained in FAB.
iv) σ-σ* transition has highest energy than π-π* transition.
v) Volatility and thermostability are two important criteria for Gas chromatography.

SECTION C

3. Attempt any *seven* parts of the following: 7 x 5 = 35

a. Give principle, theory and instrumentation of UV/Visible spectroscopy.
b. Discuss the various interferences used in flame spectroscopy.
c. Give the proper NMR signal in following compounds
i) Propanol **ii)** Acetic acid **iii)** Aspirin **iv)** Paracetamol.
d. What are immunological assays? And discuss the differences between RIA and ELISA.
e. Discuss the principle, instrumentation and application of potentiometry.
f. Write a short note on 2-D NMR.
g. Discuss the different types of ionization technique in mass spectroscopy.
h. What is electrophoresis? And discuss their types.
i. Differentiate between gel and ion exchange chromatography.

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