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J-MPH-101-T

Seat No. _____

M. Pharm. (Pharmaceutics) (Sem. I) Examination

January - 2020

Modern Pharmaceutical Analytical Techniques

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

Instructions : (1) Figure to the right indicates full marks.
(2) Draw neat and clean diagram as required.

1 Answer the following questions : **10×2=20**

(a) Explain briefly about coupling constant.
(b) Define Resolution and Column efficiency.
(c) How chlorine and bromine are differentiated with the help of Mass spectra.
(d) What are the differences between Atomic absorption and Flame emission spectroscopy?
(e) How can we differentiate primary amine and amino acid with the help of IR?
(f) Explain about R band and E band with suitable example.
(g) Explain briefly about Chemical shift.
(h) What is fluorescence Quenching?.
(i) What are the applications of fluorescence spectrophotometer?
(j) Enlist different types of sources used in X-ray instrument. Discuss any one.

2 Answer any **two** out of the following : **2×10=20**

(a) What is Chromatography? Enumerate different types of chromatography techniques. Discuss about thin layer and ion exchange chromatography in detail.
(b) Explain Bragg's law, instrumentation and applications of X-ray diffractometer. Enlist the different X-ray diffraction methods. Discuss in detail any two.
(c) What is the principle of Mass spectrometer? Draw the diagram of Mass Spectrometer. Enlist and discuss in detail about various analyzers used in mass spectrometer.

3 Answer any **seven** out of the following : **7×5=35**

(a) Explain Mc-Lafferty rearrangement.

(b) Define chromophore and Auxochrome with suitable examples. Enlist and discuss about various electronic transition observed in UV spectrometery.

(c) What is the principle if ELISA? Discuss about various types of ELISA.

(d) What are the principles of FT NMR and 13C NMR ? Mention the applications of NMR spectroscopy.

(e) Differentiate :

(i) Stretching and bending vibrations

(ii) Fluorescence and phosphorescence

(f) Write a brief note on: Ion selective electrodes in potentiometry.

(g) Enlist various types of detectors used in gas chromatography. Describe in detail any two.

(h) Write an informative note on RIA.

(i) Write an informative note on paper and zone electrophoresis.