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DBW-MPH-101-T Seat No. _____

M. Pharm. (Sem. I) Examination

July - 2022

MPH-101T : Modern Pharmaceutical Analytical Technique

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

1 Answer the following questions : **20**

(1) Explain Beer Lambert's law with its equation.

(2) Write about Modes of Molecular vibrations in IR Spectrometry.

(3) Write the principle of Atomic absorption spectroscopy.

(4) Enlist Different types of ionization Mass spectroscopy.

(5) Enlist X ray diffraction methods.

(6) What is chemical shift in NMR ? Explain with example.

(7) Enlist the analyzers used in Mass Spectroscopy.

(8) Define Resolution and theoretical plate in terms of chromatography.

(9) What is Electrophoresis ? Write its applications.

(10) What are RIA and ELISA ?

2 Answer the following questions : (ANY **TWO**) **20**

(1) Explain the fundamental principle of NMR spectroscopy. Draw labeled diagram of NMR instrumentation and briefly explain principles and applications of FT-NMR and 13C NMR.

(2) Explain instrumentation and applications of Gas chromatography in Pharmaceutical Analysis.

(3) Explain the fundamental principle of UV spectroscopy and draw labeled diagram of UV spectrophotometer and explain in detail monochromators used in UV.

3 Answer the following questions : (ANY **SEVEN**) **35**

(1) What is the principle of column chromatography ? Discuss different types of stationary phase and types of packing for column chromatography.

(2) Write a note on Coupling constant in NMR.

(3) Differentiate Dispersive and Fourier - Transform IR Spectrometer.

(4) Discuss the rule for fragmentation pattern in Mass spectroscopy.

(5) Explain principle and applications of Gel and Capillary electrophoresis.

(6) What is XRD ? Explain its principle and applications.

(7) Explain Bragg's law.

(8) Write a note on Bioluminescence assays.

(9) Explain instrumentation of High-Performance Liquid chromatography.
