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Total No. of Questions : 14 ]

[ Total No. of Pages : 01

**M. PHARMACY DEGREE EXAMINATIONS, JULY - 2022**

**First Semester  
PHARMACEUTICS**

**MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES**

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Time : **Three Hours**

Maximum : **75 Marks**

**SECTION - A**

**Answer any FIVE Questions.**

**5x5 = 25 M**

1. Write a short note on interferences and applications of Atomic absorption spectroscopy.
2. Outline the applications of NMR Spectroscopy.
3. Write a short note on FAB and MALDI.
4. Give an account on types of columns used in High Performance Liquid Chromatography.
5. Explain the principle and applications of Affinity Chromatography.
6. Write a short note on Isoelectric focusing.
7. Describe the applications of ELISA technique.

**SECTION - B**

**Answer any FIVE Questions.**

**5x10 = 50 M**

8. Explain various electronic transitions and solvent effect in UV-Visible spectroscopy.
9. Discuss the instrumentation of Dispersive and Fourier - Transform IR Spectrometer.
10. Write the principle and instrumentation of NMR Spectroscopy.
11. Describe Time of Flight and Quadrupole analyzers in Mass Spectroscopy and add a note on pharmaceutical applications of Mass Spectroscopy.
12. Write a detailed note on Sample injection methods and detectors used in Gas Chromatography.
13. Give an account on production of X-rays and applications of X-ray diffraction technique.
14. Explain principle, procedure and applications of Radio immuno assay.



**M.PHARMACY (Regular) DEGREE EXAMINATIONS, FEB/MAR-2020**

**First Semester**

**M.PHARMACY**

**MPH/MIP/MPC/MPA/MQA/MPL/MPG**

**MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES**

**Time: Three Hours**

**Maximum marks:75**

**SECTION-A**

**Answer any FIVE Questions**

**5X5=25M**

1. Discuss modes of linear and non-linear vibrations.
2. Write a note on pumps used in HPLC.
3. Write how  $^{13}\text{C}$  NMR is used in the identification of -OH and COOH groups.
4. Enlist various gels used in size exclusion chromatography.
5. Explain Mc Lafferty rearrangement.
6. What is the role of single crystal X-ray crystallography in drug discovery process?
7. Write short notes on electrophoretic mobility?

**SECTION-B**

**Answer any FIVE Questions**

**5X10=50M**

8. Write in detail on derivatization techniques used in GC.
9. Write short notes on
  - a) Mass spectrometry as HPLC detector
  - b) Woodward Fisher Rules
10. Write in detail on principle and applications of ESI and FAB ionization.
11. What is a mass ionizer? Write in detail on MALD ionizer.

12. a) Write advantages of TLC over HPLC.  
b) Stationary phases used in size exclusion chromatography.
13. Write in detail on gel electrophoresis.
14. Suggest suitable structure for the following spectral data  
Molecular formula- $C_5H_{10}O_2$   
IR-1710, 2950, 3250 (broad)  
1HNMR-0.93 (t, 3H), 1.67 (dq, 2H), 2.31 (t, 1H), 10.6 (brs, 1H)

**M.PHARMACY (Supply) DEGREE EXAMINATIONS, AUGUST-2019****First Semester****PHARMACEUTICS****MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES****Time: Three Hours****Maximum marks:75****SECTION-A****Answer any FIVE Questions****5X5=25M**

1. Write the applications of Flame emission spectroscopy and Atomic absorption spectroscopy.
2. Outline the principles of FT-NMR and <sup>13</sup>C-NMR spectroscopy.
3. What do you mean by Metastable ions and isotopic peaks.
4. Write a short note on Paper chromatography.
5. Enumerate the applications of HPLC.
6. Give a brief emphasis on Capillary electrophoresis.
7. Write the principle and applications of ELISA technique.

**SECTION-B****Answer any FIVE Questions****5X10=50M**

8. Explain the instrumentation associated with UV-Visible spectroscopy.
9. Discuss different modes of molecular vibrations and factors affecting vibrational frequencies in IR spectroscopy.
10. Write the factors influencing chemical shift in NMR spectroscopy.
11. Enumerate the principle involved in Mass-spectroscopy and explain FAB and MALDI.
12. Give an account on detectors used in Gas chromatography.

13. Write a note on Bragg's law and Rotating crystal technique.
14. Give a detailed note on Radio Immuno Assay.

