[Total No. of Questions - 15] [Total No. of Prin Pages - 2]
(2126)

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16452(D)

M. Pharmacy 1st Semester Examination

Advanced Pharmaceutical Instrumental Analysis

MP-011

Time : 3 Hours **Max. Marks : 90**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt any one from Section-A, any three from Section-B and any seven from Section-C.

SECTION - A
(Very long questions)

1. Discuss the principle, instrumentation and pharmaceutical applications of ^{1}H-NMR spectrometer. Describe the shielding and de-shielding effect. Predict the ^{1}H-NMR spectrum for ethanol in $CDCl_3$.
2. Discuss the principle, instrumentation and pharmaceutical applications of HPTLC. (25×1= 25)

SECTION - B
(Long questions)

3. Describe the Woodward fieser rules for predicting λ_{max} of organic compounds with suitable examples..
4. Give the principle of FTIR spectrometer. Discuss the sample handling techniques used in IR spectroscopy.
5. Describe the instrumentation of Mass spectrometer. Predict the fragmentation pattern for benzamide.
6. Discuss the principle and pharmaceutical applications of Differential scanning calorimetry. (10×3=30)

SECTION - C
(Short questions)

7. Write down the applications of Transmittance electron microscopy.
8. Describe the principle and instrumentation of HPLC.
9. Write down the principle and pharmaceutical applications of affinity chromatography.
10. Discuss the detectors used in UV spectrometer.
11. Discuss the effect of Hydrogen bonding in IR spectroscopy with suitable example.
12. The mass spectrum of 3-butyn-2-ol shows the base peak at m/z 55. Explain why the fragment giving rise to this peak would be very stable.
13. Write a note on Solvents used in sample handling in ^{1}H-NMR spectroscopy.
14. Describe the detectors used in Gas chromatography.
15. Write a detailed account on Gel electrophoresis. (7×5=35)

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