OR

(p) What do you mean by Mac-Lafferty rearrangement and discuss the fragmentation process. 5

(q) Explain the fragmentation pattern in Mass spectroscopy and discuss field ionization mass spectroscopy (FIMS). 8

(r) Define :—

(i) Metastable ion

(ii) Molecular ion

(iii) Base peak 3

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Third Semester M. Sc. (Part–II)(CBCS) Examination

PHARMACEUTICAL CHEMISTRY

3SA1–Modern Pharmaceutical Analytical Techniques – I

P. Pages : 4

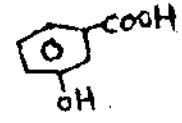
Time : Three Hours] [Max. Marks : 80

Note : (1) All questions are compulsory and carry equal marks.
(2) Use of calculator is permitted.

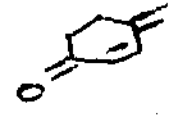
1. (a) Explain the principle and Instrumentation of UV-visible spectroscopy. 8

(b) Calculate λmax for following compounds :—

(i) 

(ii) 

(iii) 

(iv) 

8

(p) Explain in detail about photometric titration and its applications. 8

(q) Discuss about Wood–word-Fischer rules for calculating absorption maxima in uv–spectroscopy. 8

2. (a) Explain principle of flame emission spectro scopy and discuss its application in pharmacy. 8

(b) Compare Fluorescence and Uv-visible absorption methods. 8

OR

(p) Discuss the theory and instrumentation of spectrofluorimetry. 8

(q) Explain the principle and instrumentation of AAS. 8

3. (a) What do you mean by PQR bands in IR spectroscopy with selection rules ? 8

(b) Discuss about Attenuated Total Reflectance (ATR). 8

OR

(p) Discuss the basis principle and instrumentation of IR spectroscopy. 8

(q) Discuss various factors influencing vibrational frequency in IR spectroscopy. 8

4. (a) What is NMR spectroscopy ? Discuss its principle and instrumentation. 8

(b) What do you mean by 13 cNMR spectroscopy ? Explain the applications of 13 cNMR in pharmacy. 8

OR

(p) Describe the following terms : cosy, NOE 8

(q) Discuss the factor affecting chemical shift in brief. 8

5. (a) Discuss the principle and instrumentation of Mass spectroscopy. 8

(b) Explain about GCMS and Matrix Assisted laser desorption/ionization MS (MALDI-MS) 8