

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: MPHARM
BRANCH: PHARMACY

SEMESTER : II
SESSION : SP/18

SUBJECT: MPH2011- ADVANCED SPECTRAL ANALYSIS
TIME: 3 HOURS

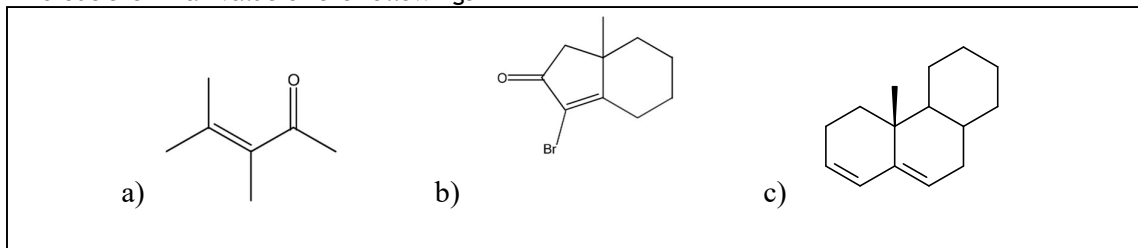
FULL MARKS: 60

INSTRUCTIONS:

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
 2. Candidates may attempt any 5 questions maximum of 60 marks.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a) Discuss about ATR spectroscopy and write it's significance. [6]

Q.1(b) Find out the λ_{max} value of the followings [6]



Q.2(a) Write a note on COSY and HECTOR NMR. [6]

Q.2(b) Predict the chemical shift positions of methyl acetate and ethyl acrylate. [6]

Q.3(a) Define and differentiate between DSC and DTA. How you will interpret DTA curve? [6]

Q.3(b) Describe in detail about Raman spectroscopy. [6]

Q.4(a) Write a note on ELISA and it's significance. [6]

Q.4(b) Discuss the Mc Lafferty Rearrangement and its significance in Mass spectroscopy. [6]

Q.5(a) What is High Resolution Mass spectroscopy (HRMS)? Discuss with examples. [6]

Q.5(b) Predict the structure of Compound X which shows m/e peaks at 88, 70, 55, 42, 31(very intense) & 29. [6]

Q.6(a) Describe the importance of α and β -cleavage in Mass spectroscopy. [6]

Q.6(b) Describe flash chromatography and its pharmaceutical applications. [6]

Q.7(a) Draw a schematic diagram of LC-NMR hyphenated instrument and discuss its merits and demerits. [6]

Q.7(b) Write notes on: Ring rule and Isotopic peaks [6]

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