

Question Paper

Exam Date & Time: 02-May-2019 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.

MPharm - Pharmaceutical Analysis

MPharm Second Semester- End-Semester Examination- May 2019

Date : 02/05/2019

Advanced Instrumental Analysis [PCH-MPA201T]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

- 1) Explain immobilised polysaccharides used in Enantiomeric separation (10)
- 2) Write the principle, instrumentation and specific applications of LC-MS. (10)
- 3) Explain the different steps involved in HPTLC (10)
- 4) What is chemical shift? Explain the parameters the chemical shift depends on and also the factors that influence the chemical shift values. (10)
- 5) Expand HETCOR. Give its general feature. List out and explain about the various techniques included in it along with spectra. (10)

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

- 5) Assign the PMR chemical shift values for the following compounds: (5)
a) Anisole b) Ethyl benzene c) Ethyl alcohol d) Diethyl ether
- 7) Explain the various steps involved in the 2D NMR spectroscopy with a diagram. (5)
- 8) Discuss the various types of fragmentation ions produced in Mass spectroscopy and their importance (5)
- 9) Discuss the methods for the separation of Chiral compounds (5)
- 10) Discuss the methods involved in GC derivatisation (5)

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