Day: Tuesday

Date: 01-07-2014

Time: 10:00AM TO 1:00 P.M.

Max. Marks: 60

N.B.:

1) Attempt **ANY THREE** questions from Section-I & Section - II each.

SECTION - I

Q.1 Assign the correct structure to the following spectral data for a compound **(10)** having a molecular formula $C_6H_{10}O_2$. Show all the work.

IR (Neat): 3010, 1730, 1108 cm^{-1}.

PMR (CDCl$_3$/TMS) δ 7.1-6.5 [m,1H, multiplet

consists of a doublet (J = 15 Hz) & a quartet]

5.8 [d,1H, J=15 Hz], 4.2 [q,2H], 2.0 [d, 3H], 1.24 (t,3H).

CMR (CDCl$_3$/TMS) δ : 167(s), 145.6(d), 121.7(d),

60(t), 19.8(q), 15.3(q).

EIMS: m/e 115, 114, 99, 86, 69 (100%), & 41.

(70eV).

Q.2 Ibuprofen gave the following m/z values in EIMS. Assign the fragments to **(10)** these m/z values showing all the work.

m/z: 206, 163, 161 (100%), 119, & 91.

Q.3 Give the similarities and differences between ^1H & ^{13}C nuclei with respect to **(10)** NMR technique.

Q.4 a) Give an example of McLafferty rearrangement in MS. **(05)**

b) Importance of DEPT technique in NMR spectrometry. **(05)**

SECTION - II

Q.5 Explain the Van Deemter equation of chromatography. Explain how **(10)** resolution can be improved in TLC (Normal Phase) with this equation.

Q.6 Describe in detail the working of a loop injector in HPLC. Give diagrams to **(10)** explain the same.

Q.7 Explain the principle of thermogravimetric analysis (TGA) & the **(10)** instrumentation. Explain how it differs with Differential Scanning Calorimetry (DSC).

Q.8 Write short notes on the following:

a) ELISA Test **(05)**

b) Ion Pair Chromatography **(05)**

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Day   : Saturday
Date : 05-07-2014

Time : 10:00 AM. TO 1:00 P.M.
Max. Marks : 60.

N.B.:

1) Answer any **THREE** questions from Section-I and any **THREE** questions from Section-II.
2) Answer to the two sections should be written in **SEPARATE** answer books.
3) The use of non-programmable electronic pocket calculator is allowed.
4) Figures to the **RIGHT** indicate full marks.

SECTION-I

Q.1 Explain the concept of plagiarism with suitable examples and prevention of plagiarism. **(10)**

Q.2 What is a research problem? Explain procedure for selection of M.Pharm. research problem. **(10)**

Q.3 Explain the essential components of a thesis. **(10)**

Q.4 Write elaborate notes on any **TWO** of the following: **(10)**

a) Basic concepts of quality by design
b) References
c) Review of literature.

SECTION-II

Q.5 Describe the hazards of radiation, handling and disposal of radioactive materials. **(10)**

Q.6 Describe bioscreening of antiarrhythmic drugs. **(10)**

Q.7 Prophylactic treatment of diseases by a drug was given in two groups of 100 subjects admitted in the hospital and housed under ideal conditions. The results after one month of treatment are. **(10)**

	Treated with drug	Not treated with drug
Occurrence of disease	30	50
Others	70	50
Total	100	100

Find out the effectiveness of this praphylactic treatment (use 5% LOS)

Q.8 Write elaborate notes on any **TWO** of the following: **(10)**

a) Non parametric tests
b) OECD guidelines for chronic toxicity
c) Screening of anticonvulsants.

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