Printed Pages: 01

Sub Code: MPA101T/MPC101T/MQA101T/MPH101T/MPG101T/MPL101T

Paper Id: **291101**

Roll No. | | | | | | | | | | | | | |

M. PHARM
(SEM-I) THEORY EXAMINATION 2019-20
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a. Differentiate between bathochromic and hypsochromic shift.
b. Define chromophore and auxochrome.
c. Give the principle of FTIR.
d. What are the factors influencing chemical shift?
e. How ESI ionization different from MALDI?
f. Discuss the principle of TLC.
g. Define electrophoresis with example.
h. Define Braggs law.
i. How DTA different from DSC?
j. Differentiate between RIA and ELISA.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a. Describe principle, instrumentation and application of HPLC.
b. Describe Chemical shift and differentiate between ^{1}H NMR and ^{13}C NMR.
c. Discuss the principle, thermal transitions and instrumentation of DSC/DTA.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a. Discuss the choice of solvents and solvent effect in UV/visible spectroscopy.
b. Describe the splitting pattern of CH_3-CH_2-OH, CH_3-CHO, $CH_3(CH_2)_4$ CH_3, C_6 H_6, CH_3 C_6 H_5.
c. Define Mclafferty rearrangement and discuss mass fragmentation rule.
d. How HPTLC chromatography superior from TLC chromatography.
e. Describe principle, instrumentation and application of potentiometry.
f. Discuss X-ray crystallography and application of X-ray diffraction.
g. Briefly describe Immunological assays and discuss about RIA and ELISA.

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