Third Year Pharm. D : SUMMER - 2019
SUBJECT: PHARMACEUTICAL ANALYSIS

Day : Wednesday
Date : 10/04/2019

S-2019-4512

Time : 10.00 A.M. TO 01.00 P.M.
Max. Marks: 70

N. B.:

1) **Q. No. 1 and Q. No. 5** are **COMPULSORY**. Out of the remaining attempt **ANY TWO** questions from each Section.
2) Answer to the both sections should be written in **SEPARATE** answer book.
3) Figures to the right indicate **FULL** marks.

SECTION –I

Q.1 a) Attempt **ANY FOUR** of the following: **(08)**

i) Define the terms HETP & Capacity factor.

ii) Write advantages and disadvantages of Amperometry over Potentiometery.

iii) Compare between adsorption TLC & Partition Chromatography.

iv) Write types of currents used in polarography.

v) Explain types of exchangers.

b) Define validation. Write about ICH guidelines. **(03)**

Q.2 a) Explain in detail about columns used in gas Chromatography. **(07)**

b) Discuss steps involved in HPTLC development. **(05)**

Q.3 a) Classify Chromatographic methods. Discuss theories of chromatography. Explain how band broadening is minimized. **(07)**

b) Give principle and applications of paper chromatography. **(05)**

Q.4 Write Short notes on **ANY THREE** **(12)**

a) Conductometric applications.

b) Dropping mercury electrode

c) Detectors in HPLC.

d) Electrophoretic techniques.

P.T.O.

SECTION -II

Q.5 **a)** Attempt **ANY FOUR** of the following: **(08)**

i) Define Wave number & Frequency.

ii) Explain various intensity shifts in UV.

iii) State principle behind fluorescence.

iv) Shielding & Deshielding in NMR.

v) Write about Hollow cathode lamp.

b) Write instrumentation of ESR Spectrophotometer. **(03)**

Q.6 **a)** Explain instrumentation of IR spectrophotometer. Discuss sampling techniques & detectors used in IR. **(07)**

b) Discuss steps involved in NMR interpretation. **(05)**

Q.7 **a)** State & derive Beer Lambert's Law. Write types of radiation sources used in UV spectroscopy. **(07)**

b) Write theory principle involved in AAS. Explain ICP & DCP with its working. **(05)**

Q.8 Write Short notes on **ANY THREE** **(12)**

a) ORD & CD

b) Types of burners used in Flame photometry

c) Applications of XRD

d) Instrumentation of Mass Spectrophotometer.

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