

**SUPPLEMENTARY
DOCTOR OF PHARMACY
Third Year Pharm. D. :SUMMER- 2022
SUBJECT : PHARMACEUTICAL ANALYSIS**

Day : Wednesday

Time : 02:00 PM-05:00 PM

Date : 14-09-2022

S-5738-2022

Max. Marks : 70

N.B.:

- 1) Q. NO.1 and Q. NO.5 are **COMPULSORY**. Out of remaining solve **ANY TWO** questions from Section-I and Section-II each.
- 2) Both the questions should be written in the **SEPARATE** answer books.
- 3) Draw neat and well labeled diagram **WHEREVER** necessary.

SECTION-I

- Q.1** A) Attempt **ANY FOUR** of the following: (08)
- i) Write principle of DSC and DTA.
 - ii) Write role of solvent degassing methods in HPLC.
 - iii) Write about visualization techniques used in chromatography.
 - iv) Write about 3S principle in GLP.
 - v) Write Ilkovic equation and factors affecting it.
- B) Write about Circular Dichroism. (03)
- Q.2** Write about instrumentation of HPLC with an exhaustive note on pumps and radiation sources used in HPLC. (12)
- Q.3** a) Discuss in detail theories of chromatography. (07)
- b) Give historical background for ICH. Enlist various guidelines for ICH. (05)
- Q.4** Write note on **ANY THREE** of the following: (12)
- a) Applications of Electrophoresis
 - b) Electrodes used in Potentiometry
 - c) Pulse Polarography
 - d) Amperometric Titrations

SECTION-II

- Q.5** A) Attempt **ANY FOUR** of the following: (08)
- i) Write theory and principle involved in AAS and AES.
 - ii) Write about internal standards used in NMR.
 - iii) Write about intensity shifts in UV spectroscopy.
 - iv) Enlist types of burners used in flame photometry. Mention ideal characteristics of burners.
 - v) Write about factors affecting fluorescence phenomenon.
- B) Write applications of UV spectroscopy. (03)
- Q.6** Write theory principle involved in Infra-Red Spectroscopy. Discuss with neat and labeled diagram instrumentation of IR spectrophotometer. (12)
- Q.7** a) State and derive Beer Lambert's law. Discuss with a neat and labeled diagram instrumentation of a double beam UV spectrophotometer. (07)
- b) Write about radiation sources used in AAS. (05)
- Q.8** Write note on **ANY THREE** of the following: (12)
- a) ESR Spectrophotometer
 - b) Applications of NMR spectroscopy
 - c) Applications of Mass spectroscopy
 - d) Applications of XRD

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