

T.Y.B.SC. SEM – VI (2014 Course) : SUMMER - 2019
SUBJECT: CHEMISTRY: ANALYTICAL CHEMISTRY – VI

Day: Monday
Date: 15/04/2019

Time: 03.00 PM To 05.00 PM
Max Marks. 40

S-2019-1039

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labelled diagrams **WHEREVER** necessary.
- 4) Both the sections should be written in **SAME** answer book.

SECTION - I

Q.1 Attempt any **TWO** of the following: **(10)**

- a) Define Distribution ratio and distribution coefficient and derive a relationship between them.
- b) What is HPLC? Sketch schematic diagram of HPLC. What are its basic components?
- c) Write a note on Match box model.

Q.2 Attempt any **TWO** of the following: **(10)**

- a) What is thin layer chromatography? Describe it with a neat diagram.
- b) Describe in detail about counter current extraction.
- c) Explain with suitable diagram premixed burners used in Flame emission spectroscopy.

SECTION - II

Q.3 Attempt any **TWO** of the following: **(10)**

- a) Write the applications of solvent extraction in detail.
- b) Draw an optical diagram of a flame photometer? Discuss the various steps involved in it.
- c) Define Chromatography. Discuss column chromatography in detail.

Q.4 Attempt any **TWO** of the following: **(10)**

- a) For a given system, calculate the percent extracted for a volume ratio V_o/V_a of i) 1 and ii) 10, for a single extraction.
- b) In TLC, separation of mixture consists of A, B, C components. Solvent front is 13.2 cm while distance travelled by A is 8.3cm, for B is 5.6cm and for C, 7.5cm. The unknown compound D has R_f value 0.5. Find out distance travelled by unknown compound
- c) A mixture of methane, ethane and propane was analyzed by gas chromatography. The peak areas were found to be 25cm^2 , 10cm^2 and 60cm^2 respectively. Calculate the percentage composition of the mixture.

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