

V.P. & R.P.T.P. SCIENCE COLLEGE, VALLABH VIDYANAGAR
B.Sc. (SEMESTER –VI) INTERNAL EXAMINATION
Saturday, 11th March 2017
11.00 am – 12.30 pm
PHYSICAL CHEMISTRY: US06CCHE06

Marks-25
(03)

Q-1 Select one most appropriate response out of the four provided to you.

- (i) Which of the following is a factor which does not influence the rate of a reaction?
(a) nature of reactants (b) temperature (c) concentration of reactants (d) molecularity
- (ii) Which of the following substance are pellicular supports used in HPLC.
(a) zipax (b) corasil (c) vydac (d) all of the above
- (iii) Multiple extraction is _____ efficient as compared to single extraction.
(a) more (b) less (c) the same (d) none of these

Q-2 Give answers of any two questions given below.

(04)

- (i) State Arrhenius equation. Why 'A' is known as a frequency factor?
(ii) Describe any two types of column packing in HPLC.
(iii) State and explain Nernst distribution law with proper example.

Q-3 Discuss the effect of temperature on the rate of a reaction.

(06)

OR

Q-3 Derive an equation for the rate constant of opposing reaction in which the initial concentration of the product is zero.

(06)

Q-4 Draw the schematic diagram of HPLC. Give principle apparatus and function of each part of HPLC.

(06)

OR

Q-4 What are the characteristics of detectors used in HPLC? Discuss UV detector in detail.

(06)

Q-5 Discuss briefly various factors that are responsible for affecting the process of extraction.

(06)

OR

Q-5 (a) Discuss various techniques used in liquid-liquid extraction.

(03)

(b) The distribution ratio for palladium chloride between tri-n-butyl phosphate and 3 M HCl is 2.3 in order to extract 99.5 percent of the metal from 15 ml of 5×10^{-3} M PdCl_2 . How many extraction should be carried out using 5.0 ml tri-n-butyl phosphate each time.

(03)

