

SV (A-22) Seat No: _____

Sardar Patel UniversityB. Sc. (Semester – IV) Examination
NC 2010 Batch06th May, 2016Date: 06th May 2016, Fri. day

Time: 02:30pm to 04:30pm

Industrial Chemistry & Industrial Chemistry Vocational

COURSE NO: US04EGCH04 (INDUSTRIAL METHODS OF ANALYSIS)

Notes: Figures to the right indicate full marks.

Total marks: 70

Q.1 Answer the following Multiple Choice Questions. (All are compulsory)

(10)

- What is the range of pH of antimony-antimony oxide electrode is used?
 - 4-12
 - 3-9
 - 4-9
 - 1-12
- The relation between molecular conductance (μ_v) & specific conductance (k) is....
 - $\mu_v = v/k$
 - $\mu_v = v k$
 - $k = \mu k$
 - None of above
- If solid stationary phase & liquid mobile phase is used in the chromatography then the method is known as.....
 - Column
 - Thin layer.
 - HPLC
 - All of above
- The porous medium without any movement through which mixture move is called
 - Moving phase
 - Stationary phase
 - Both 1 & 2
 - None of above
- The factor which is main reason for the HPLC came into use is.....
 - Speed (High)
 - Speed (Low)
 - Both 1 & 2
 - None
- The stationary phase which is bonded chemically onto an inert support is called ...
 - Non bounded phase
 - Bounded phase
 - Chemical phase
 - None
- The diameter & length of column in HPLC is.....
 - 1 to 4 mm & 20-50 cm
 - 5 to 7 mm & 30-40 cm
 - 8 to 9 mm & 20-30 cm
 - 8 to 11 mm & 30-40 cm
- _____ transition has highest energy level
 - $\pi \rightarrow \pi^*$
 - $n \rightarrow \sigma^*$
 - $\sigma \rightarrow \sigma^*$
 - none of these
- Due to hydrogen bonding in Ultra violet absorption wavelength is.....
 - Higher
 - shorter
 - No effect
 - None of these
- Which Instrument is used for large wavelength Region?
 - Colorimeter
 - Photometer
 - Spectrophotometer
 - None of these

(P.T.O)

(1)

Q.2 Answer the following short questions. (Any Ten)

(20)

1. Write a disadvantage of hydrogen electrode.
2. Define term specific conductance.
3. Write an applications of conductometric titration.
4. Discuss factors effecting column efficiency.
5. Write applications of TLC.
6. Enlist superiority of TLC over Column chromatography.
7. Write the principal of HPLC technique.
8. Discuss on the carrier gas used in GC.
9. Enlist various advantages of gas chromatography.
10. Saturated hydrocarbons can serve as the best solvent for UV measurements.
11. List out the advantages of double beam instrument.
12. Explain Beer's law.

Q.3 Write notes on Hydrogen electrode and Glass electrode.

(10)

OR

Q.3 Discuss the following:

(10)

- a. Application of pH measurement.
- b. Conductance measurement with Wheatstone bridge.

Q.4 Discuss types of paper chromatography with the diagrams.

(10)

OR

Q.4 Give complete classification of Chromatography and discuss the experimental techniques of column chromatography.

(10)

Q.5 Write a notes on Gas chromatography.

(10)

OR

Q.5 Write a note on: Flame Ionization Detector (FID) and Electron Capture Detector (ECD).

(10)

Q.6 Write a note on UV-Visible spectrophotometer and its applications.

(10)

OR

Q.6 Write notes on following:

(10)

- a. Lambert's-Beer's law and factors responsible for the deviation from the laws.
- b. Visual comparators.

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