



Seat No. _____

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No. of printed pages : 4

Sardar Patel University
B.Sc. EXAMINATION
Fifth Semester (CBCS)

US05CCHE24 Analytical Chemistry

DATE : 26-11-2021

Time : 3:00 pm to 5:00 pm Maximum marks 70

Multiple choice questions(10 marks)

- 1) Which type of metal is used in hydrogen electrode ?
a) Reactive b) Electropositive c) Inert d) Electronegative
- 2) pH is expressed as
a). $-\ln [H^+]$ b) $-\log [H^+]$ c) $+\log [OH^-]$ d) $-\log_{10} [OH^-]$
- 3) In chromatography the efficiency of column increases with....
a) Height of column b) increase in column width c) decrease in column width d) a & c
- 4) To withstand high pressure , the column in HPLC is made up of
a) thick glass b) stainless steel c) both a & b d) None of them
- 5) The percentage of halogenated pesticide in environment can be detected by
a) TCD b) ECD c) FID d) FPP
- 6) In gas chromatography quantitative determination is based on...
a) Number of peak b) Position of Peak
c) Area of Peak d) All the above
- 7) Electro Chemical detector belongs to detector
a) Bulk property b) universal c) solute property d) Selective
- 8) Continuous Extraction is used when the distribution ratio is very.....
a) high b) Moderate c) Low d) All of this
- 9) For the study of distribution law the two solvent should be.....
a) miscible b) non- miscible c) volatile d) Reactive
- 10) Multiple Extraction is.....efficient than Single extraction
a) more b) less c) equally d) none of the above

Fill in the blanks (8)

- 1) The pH range for glass electrode is..... (2 to 6/2 to 14)
- 2) To remove effect, platinised platinum electrode is used in conductance measurements.
(polarization/ dilution)
- 3) Ohms law can be represented as.... ($I = E/R$, $E = I/R$)
- 4) Number of theoretical plate refers to (height of column /measure of column efficiency)
- 5) The property of helium gas which is useful as a carrier gas is...(inertness/reactivity)
- 6) In gas chromatography stationary phase can be.....(liquid or gas /solid or liquid)
- 7) Common examples of masking agent are (cyanides /carbonates)
- 8) Name apparatus used for the process of solvent extraction.....(separatory funnel/ bunncher funnel)

Short Que (Any 10) 10x2=20)

- 1) What are the advantages of the glass electrode ?
- 2) Give limitation of Quin hydrone electrode,
- 3) Define specific conductance,
- 4) Define Rf value for Paper Chromatography,

- 5) Describe Soap bubble meter.
- 6) Define the term eluate and elution in Column chromatography.
- 7) What are the function of solid support in GLC?
- 8) What is the use of guard column in HPLC?
- 9) Enlist the specification for carrier gas in gas chromatography.
- 10) Give important applications of HPLC.
- 11) what is masking agent?
- 12) What are the limitation of Nerst Distribution Law?

Long answer questions attempt any four (4x8=32)

- 1) Give advantage and disadvantages of hydrogen electrode.
- 2) Discuss the various types of paper chromatography in detail.
- 3) Discuss graphical method for determination of end point in acid-base.
- 4) Discuss the types of various ion Exchange Resin and give their applications.
- 5) Explain the principal and working of Thermal conductivity detector in Gas chromatography.
- 6) Describe the principle of HPLC. Describe the various components of HPLC.
- 7) Explain the process of solvent extraction. Differentiate between distribution ratio and distribution coefficient.
- 8) Discuss in detail the factors which Influence the process of solvent extraction.

