

SEAT NO:- _____

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SARDAR PATEL UNIVERSITY V.V. NAGAR.

B. Sc. SEM:-5 EXAMINATION OCT-2025

SUBJECT CODE:-US05CCHE54 (ANALYTICAL CHEMISTRY)

DATE: 08.10.2025

TOTAL MARKS (70)

TIME: 10:00 AM TO 1:00 PM



Que-1 Please tick proper option from the following.

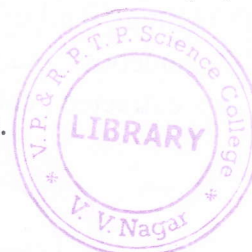
(10)

- (1) What is effect of dilution on equivalent conductance ?
(a) Increase (b) Decrease (c) Both a and b (d) None of these
- (2) Unit of specific resistance is _____
(a) ohm.cm (b) ohm (c) mhos (d) $\text{ohm}^{-1}.\text{cm}^{-1}$
- (3) The composition of Quinone and hydroquinone in quin-hydrone is _____
(a) 1:2 (b) 1:1 (c) 2:1 (d) None of these
- (4) In ascending chromatography solvent run in _____ direction.
(a) upward (b) downward (c) both a & b (d) horizontal
- (5) Which of the following adsorbent used for column adsorption chromatography has maximum adsorptive power.
(a) starch (b) activated silicic acid (c) CaCO_3 (d) lime
- (6) The length of column in gas chromatography is _____ cm.
(a) 120 to 150 (b) 100 to 110 (c) 110 to 120 (d) 80 to 100
- (7) which of detector is used for analysis of halogen group compound.
(a) Flame ionization detector (b) thermal conductivity detector
(c) electron capture detector (d) all of these
- (8) In which principle ultraviolet detector is work ?
(a) absorption (b) adsorption (c) Both a & b (d) None of these
- (9) The process of liquid extraction is influence by _____
(a) pH (b) oxidation state (c) Both a and b (d) None of these
- (10) _____ types of complex make masking agent with interference.
(a) Insoluble (b) Soluble (c) inert (d) None of these

Que:2 Write any ten from following .

(20)

- (1) Define: Conductance and Specific resistance
- (2) Write advantages of conductometry titration.
- (3) Give advantages and disadvantages of glass electrode.
- (4) Explain ohm's law.
- (5) What is meant by R_f and R_x value ?
- (6) Give the principle of ascending and descending paper chromatography.
- (7) Write advantages of thin layer chromatography.
- (8) Write advantages of gas chromatography.
- (9) Explain the type of detector used in HPLC with suitable example.
- (10) Give characteristic of liquid used in liquid-liquid extraction.
- (11) Write limitation of Nernst distribution law.
- (12) Write the advantages of solvent extraction.



- QUE:-3** (a) Discuss effect of dilution on conductance. (5)
(b) Write short notes on hydrogen electrode. (5)

OR

- (a) Explain acid – base titration of conductometry titration. (5)
(b) Write short notes on quin-hydrion electrode. (5)

- QUE:-4** (a) Classify the various types of chromatography and explain paper chromatography. (5)
(b) Write a short note on application of TLC. (5)

OR

- (a) Explain the principle of ion exchange chromatography. (5)
(b) Discuss the method of separation of amino acid mixture by paper chromatography. (5)

- QUE:-5** (a) Write note on thermal conductivity detector. (5)
(b) Draw schematic diagram of HPLC & write note on each component. (5)

OR

- (a) Explain factor affecting in efficiency of chromatography separation. (5)
(b) Write advantages of HPLC. (5)

- QUE: 6** (a) Derive an equation of solvent extraction method. (5)
(b) Write type of solvent extraction and write a note on type of solvent extraction. (5)

OR

- (a) Discuss the factor affecting on extraction. (5)
(b) Using 50 ml of organic extractant each time, extraction from 100 ml aqueous solution was carried out twice and 96 % of the substance was extracted, calculate the distribution ratio. (5)

