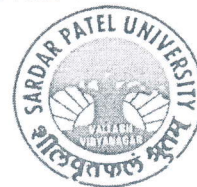


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Bachelor of Science (Semester IV) Internal Examination - 2026
US04MACHE02 : ANALYTICAL CHEMISTRY-I

Date: 09-03-26 MONDAY

Time: 2:45 P.M. TO 4:15 P.M.

Total marks : 30

Note: Figures to the right indicate marks of the question.

Q-1 Write the most appropriate answer from the following multiple-choice questions. [06]

1 During the titration chemically equivalent amounts of analyte and titrant is known as

- (a) End point (b) Equivalence point
 (c) dead point (d) None of the above

2 40 grams of NaOH is dissolved in one liter solution. Calculate Molarity

- (a) 1.0 (b) 0.1
 (c) 0.11 (d) 0.12

3 Which indicator is used to analysis hardness of water.....

- (a) Potassium Chromate (b) Eriochrome black T
 (c) Phenolphthalein (d) Methyl orange

4 Oxidation involves

- (a) gain of electrons (b) increase in oxidation number
 (c) addition of hydrogen (d) loss of electron

5 In titration of Ce^{+4} Vs Fe^{+2} _____ is act as oxidizing agent.

- (a) Ce^{+4} (b) Fe^{+2}
 (c) Ce^{+4} , Fe^{+2} both (d) None of these

6 The _____ is an important requirement of the aquatic life.

- (a) Dissolved nitrogen (b) Dissolved chlorine
 (c) Dissolved oxygen (d) Dissolved methane

Q-2 Show that the color change range, pH of the system is $\text{pH} = \text{pK}_{\text{In}} \pm 1$. [06]

OR

Q-2 What is an indicator? Explain selection of indicator in detail [06]

Q-3 What is water pollutant? Classify water pollutant and explain each of them. [06]

OR

Q-3 Discuss method to analyze conductivity of water sample. [06]

Q-4 Write a note on complexometric titration curve. [06]

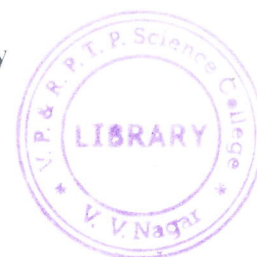
OR

Q-4 Discuss back titration in EDTA titration. [06]

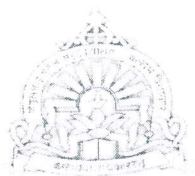
Q-5 Explain the titration curve for ferrous ion and cerium (IV) ion in detail. [06]

OR

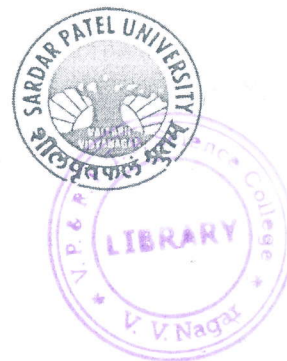
Q-5 Write a note on single electrode potential. [06]



Where there is a will, there is way



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Bachelor of Science (Semester IV) Quiz - 2026
 US04MACHE02 : ANALYTICAL CHEMISTRY-I

Date: 09-03-26 MONDAY

Time: 20 minutes

Total marks :15

[08]

Q-1 Fill in the blanks with appropriate answer given in the bracket.

- (i) The solution taken up in the Flask is known as _____ (Analyte, Titrant)
- (ii) Substance whose standard solution cannot be prepared by direct weighing is known as _____ (Secondary standard, Primary standard)
- (iii) EDTA is the best _____ (Complexing agent, Buffer)
- (iv) Temporary hardness of water is due to _____ ($\text{Ca}(\text{HCO}_3)_2$, MgSO_4)
- (v) _____ is added in the titration of KMnO_4 . (HCl, H_2SO_4)
- (vi) Reduction involves _____. (Loss of electron, Gain of electrons)
- (vii) Full name of BOD is _____. (Biological Oxygen Demand, Biochemical Oxygen Demand)
- (viii) Nephelometer is used to determine _____ of the water. (Colour, Turbidity)

Q-2 Whether the following statement is true or false. Write your answer in the box [07]

- | | | |
|--|---|---|
| (i) A chemical substance which is used to indicate completion of the reaction is known as buffer | [|] |
| (ii) Symbol of molarity is M. | [|] |
| (iii) Hardness of water is due to presence of Cu & Mn salt in water. | [|] |
| (iv) Eriochrome black T indicator is used to analysis hardness of water. | [|] |
| (v) Titration of HNO_3 with KOH is a redox titration. | [|] |
| (vi) Platinum Cobalt Method used to measure the conductivity of a water sample | [|] |
| (vii) Spectrophotometer is used to determine TDS of water sample | [|] |