U.G. 5th Semester Examination - 2020

CHEMISTRY

[HONOURS]

Course Code : CHEM(H)CC-P-12/PR

[PRACTICAL]

Full Marks : 20   Time : 2 Hours

The figures in the right-hand margin indicate marks.

Answer any **four** questions from the following: $5 \times 4 = 20$

1. Write the principle for the determination of surface tension by a stalagmometer through

    i)   Drop weight method

    ii) Drop number method. Explain why the drop number method is more accurate than drop weight method. $1\frac{1}{2} + 1\frac{1}{2} + 2 = 5$

2. What is CMC? Write the dimension of interfacial tension. Plot surface tension vs. Log C for different concentrations (C) of solutions of a surfactant and hence determine the CMC value of that surfactant.
    $$1+1+2+1=5$$

3. What do you mean by 'Absorbance' of a solution? Upon which factors does the Absorbance value of a solution depend? Show that the Absorbance is an additive property. $1+2+2=5$

4. Write the Lambert-Beer's law. How will you verify this law for $KMnO_4$ solution through a spectrophotometer? $1+4=5$

5. Write the expression of pH of a buffer solution. How will you determine the pH value of a buffer solution with the help of a spectrophotometer using Bromocresol green indicator? $1+4=5$

6. Explain the theory for the kinetic study of $K_2S_2O_8+KI$ reaction and hence the process for the determination of the rate constant. $3+2=5$

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