Gurudas College

Internal Examination, 2020

CHEMISTRY(Honours)

BSc. Part II (1+1+1 System)

Paper III

Group B (Physical Chemistry)

Time=2hrs   **F.M.=25**

Answer any 5 questions   (5x5=25)

1) Define surface tension. Write down the dimension and CGS unit of it.
2) Write down 'Laplace equation' clearly mentioning the meaning of different terms involved in it.
3) Both oxalic acid and sulphuric acid are dibasic but their conductance versus NaOH solution curve are totally different,- Explain.
4) Which of the following is a buffer solution? (i) 5ml 0.4 (N) Acetic acid + 5ml 0.4 (N) NaOH solution (ii) 5ml 0.4 (N) Acetic acid + 2ml 0.4 (N) NaOH solution.
5) Write down Debye-Huckel limiting law and explain the terms in it.
6) The value of K_P for the reaction NH_3 (g) $\rightleftharpoons \frac{3}{2} H_2$ (g) $+ \frac{1}{2} N_2$ (g) is 1.36 x 10^{-3} at 298K. Determine the corresponding value of K_C.
7) Evaluate the commutator $[x, p_x]$.
8) What is 'Compton effect'? Use a properly labelled diagram to illustrate your answer.