Smt. R. D. Gardi B.Pharmacy college, Nyara, Rajkot

B.Pharm. (Semester-II) Mid-Semester Examinations: 2009

[Time: 2 Hours] Date: 30/03/2009 [Max. Marks: 40]

PHARMACEUTICAL CHEMISTRY-II

SECTION-I (ESSAYS): Attempt any TWO. **(8 x 2 = 16)**

1. (A) **Define adsorption. Differentiate physical and chemical adsorption.**
   (B) **Define Langmuir adsorption isotherm equation.**
2. (A) **Define chemical kinetics. Explain in detail methods for determination of order or reaction.**
   (B) **Define surface tension. Enumerate methods for determination of surface tension. Explain in detail any one of them.**
3. (A) **What is Gibb's phase rule? Write a note on phase diagram of water.**
   (B) **Derive the equation of first order reaction.**

SECTION-II (SHORT QUESTIONS): Attempt any FOUR **(4 x 4 = 16)**

4. **Write a note on collision theory of chemical kinetics.**
5. **Write a brief note on viscosity and optical rotation.**
6. **The first order rate constant for decomposition of ampicillin at pH 5.8 and 35°C is 2×10^{-7} sec^{-1}. The solubility of ampicillin is 1.1 g per 100 ml.**
   (a) **Calculate zero order decomposition constant of suspension containing 2.5 gm ampicillin/100 ml.**
   (b) **The shelf-life (days required to decompose to 90%)**
7. **When ethanol burns in O_2, CO_2 and H_2O are formed. Write the equation which describes this reaction.**
   The standard heats of formation of $C_2H_5OH_{(l)}$, $CO_{2(g)}$ and $H_2O_{(l)}$ are -277.5, -390 and -287.0 KJ mol^{-1} respectively. Calculate the standard heat for the combustion of ethanol.

8. **Define and explain the following terms with example.**
   (a) **Heat of formation**
   (b) **Heat of sublimation**
   (c) **Heat of Neutralization**
   (d) **Bond Energy**

SECTION-III (VERY SHORT QUESTIONS): Attempt any FOUR. **(2 x 4 =8)**

9. **Dipole moment of carbon tetrachloride is zero. Comment**
10. **At normal pressure, on increasing temperature, solid carbon dioxide simply sublimes. Comment.**
11. **Explain Parachor.**
12. **Define the terms Refractive Index and Hydrogen bonding.**
13. **What is half-life? Calculate the half-life of a drug whose first order rate constant is 0.425 min^{-1}.**