February-2008

[KS 740] **Sub. Code : 4231**

SECOND B.Pharm. DEGREE EXAMINATION.

(Regulation 2004)

Paper II — PHARMACEUTICAL ANALYSIS AND PHYSICAL CHEMISTRY

Q.P. Code : 564231

Time : Three hours — Maximum : 90 marks

Theory : Two hours and forty minutes — Theory : 70 marks

M.C.Q. : Twenty minutes — M.C.Q. : 20 marks

Answer Section A and B Separately.

SECTION A

(PHARMACEUTICAL ANALYSIS)

I. Long Essay : (1 × 15 = 15)

Write any ONE question.

1. (a) Explain the basic concepts of neutralisation titration. (7)

(b) How will you estimate the following?

(i) A mixture containing CO_3^{2-} and HCO_3^-.

(ii) Polyprofic acid. (8)

2. (a) Write the methodology of different steps involved in gravimetric analysis giving reasons. (10)

(b) What are masking and demasking agents? What is their significance in drug assay? (5)

II. Short notes : (4 × 5 = 20)

Answer any FOUR questions.

1. What is a buffer? What are the applications of buffer solution in pharmacy and medicine?

2. Write the importance of quality control of drugs.

3. Write the method of preparation of tetrabutyl ammonium hydroxide. How is it useful in titration of a weak acid?

4. What is redox potential? What is the application of this parameter in pharmacy?

5. How will you assay an oral suspension containing $Mg(04)_2$ and $Al(04)_3$?

6. Explain oxygen flask combustion method of estimation of drugs quoting any one example.

SECTION B

(PHYSICAL CHEMISTRY)

I. Long Essay : (1 × 15 = 15)

Write any ONE question.

1. (a) Define adsorption. Explain the various factors influencing adsorption.

(b) State Raoult's law. Briefly describe the determination of molecular weight by Rat's Camphor method.

2. (a) Define the order of reaction. Explain the various methods for determining the order of reaction.

(b) Explain Hess's law of constant heat of summation.

II. Short notes : (4 × 5 = 20)

Answer any FOUR questions.

1. State and explain Henry's law for solubility of a gas in liquid.

2. Define phase rule. Explain the terms phase, component and degree of freedom.

3. Explain adiabatic expansion of an ideal gas.

4. Write in detail about the Bomb calorimeter used for the measurement of heat of reaction.

5. State Nernst's distribution law. What are its applications?

6. Define adsorption isotherm. Explain Freundlisch adsorption isotherm.
