Roll No. ..... **Total Pages : 5**

2206/M

K-33/2051

APPLIED CHEMISTRY

Paper–DBAS-103

Semester–II

Time allowed : 3 Hours] [Maximum Marks : 50

Note : The candidates are required to attempt three questions each from section A and section B carrying 5 marks each and the entire section C consisting of 10 questions carrying 2 marks each. Log Tables are allowed.

SECTION-A

1. (a) What is a Compound ? How many types of compounds can be there ? Discuss the properties of a compound. 4

   (b) Write the symbols of Mercury & Gold. 1

2. (a) Write various postulates of Bohr's model of atom in detail. 3

   (b) State & explain Pauli's exclusion principle. 2

3. (a) Give advantages of the long form of periodic table. 2

   (b) Differentiate between Sigma & Pi bonds. 3

4. (a) Write disadvantages of hard water in domestic use. 3

   (b) A sample of hard water is found to contain 204 mg of $CaSO_4$ per litre. What will be its hardness in ppm? 2

SECTION-B

5. (a) State & explain Charle's Law. 2

   (b) The volume of a gas is 10 L at STP. Find the volume of gas at 100°C and 5 atm pressure. 3

6. (a) What do you understand by three types of systems ? Explain with suitable examples. 3

(b) State & explain first law of thermodynamics. 2

7. (a) Differentiate between direct & indirect redox reactions. 2

(b) What are various factors affecting the degree of ionization. 3

8. Write IUPAC names of the following : 5

(i) CH_3–OH (ii) CH_3–CH_3

(iii) CH_3–Cl (iv) CH_3COOH

(v) CH_2=CH_2

SECTION-C

9. Attempt all questions : 10×2 = 20

(i) Write down the dimensional formulae of volume & pressure.

(ii) An element contains 15 protons and 16 neutrons. What is :

(a) the atomic number?

(b) mass number of the element?

(iii) Define the terms group & period. How many groups & periods are there in Modern Periodic Table.

(iv) State Boyle's Law.

(v) Differentiate between saturated & unsaturated hydrocarbons.

(vi) Calculate the pH value of 0.001 M HCI.

(vii) Write down the chemical formulae of ferrous sulphate, calcium carbonate.

(viii) What are the functions of salt bridge in an electrochemical cell ?

(ix) Distinguish between Hard & Soft water.

(x) Define the terms :

(a) Indicator

(b) End Point.