Total Number of Pages 2 Roll No.....

FIRST SEMESTER **B.Tech (Group B)**

MID SEMESTER EXAMINATION

AC - 104 APPLIED CHEMISTRY

Time : 1 Hour 30 Minutes Max. Marks : 20

Note : Question no.1 is compulsory.
Answer any four questions from the remaining.
Assume suitable missing data, if any.

1. Answer the following questions
   a. What do you mean by titration curve? Draw the titration curve for strong acid and strong base system.
   b. Distinguish between Iodimetry and Iodometry in volumetric analysis?
   c. Arrange the following alkenes towards order of increasing reactivity in cationic polymerization : CH2=CHCH3 , CH2=CHCl, CH2+CHC6H5
   d. What types of interparticle forces are present in polyamides and polyesters?
   e. How will you account for the mass increase of a sample with temperature in thermogram?
   f. B-Carotene is a colored compound but ethylene is not. Explain.
   g. Out of –C=C- and –C≡C- , which will require lower energy for C-C stretching and why?
   h. Suggest a method to determine the puriy of a pharmaceutical compound.

1x8

2. 5.0 g of a compound CaOCl2 was suspended in water and volume was made up to 500ml. 20 ml of this when acidified with acetic acid and treated with excess of potassium iodide solution, liberated Iodine, which required 20 ml of N/10 hypo solution for titration. Write the equations involved and calculate the percentage of available chlorine in CaoCl2.

3

3. Draw a block diagram for double beam UV-visible spectrophotometer and explain its merit over single beam.

3

4. Explain the TGA method for the quantitative analysis of a mixture of inorganic oxalates with the help of suitable thermogram.

3

5. Explain the mechanism for the free-radical polymerization of propene.

3

6. A polydisperse sample of polystyrene is prepared by mixing three mono disperse samples in the following proportions
   1g- 10,000 molecules eight
   2g- 50,000 molecular weight
   2g- 1,00,000 molecular weight
   Using this information, calculate the PDI of mixture.

3