GLA University, Mathura

Course: - B.Tech. 1st Yr, I Sem, 2nd mid Term Examination, 2013-14

Subject: Engg. Chemistry (AHC-101) **Uni. Roll No:-**

Time:-90 Minutes **Total Marks:-20**

Note:-

1. Answer any four questions from Sec A, **Any Four** from Sec B and **Any Four** from Sec C.
2. All questions of the particular group should be answered collectively at one place. All parts of a question (a, b, etc.) should be answered at one place.
3. Answer should be brief and to-the-point and be supplemented with neat sketches.
4. Any missing or wrong data may be assumed suitably giving proper justification.
5. Figures on the right-hand side margin indicate full marks.

Section A

Answer any FOUR of the following (4X1=04 Marks)

1. Define the components.
2. What do you mean by foaming in a boiler?
3. What are the biopolymers?
4. Write the relationship among mg/L, °Cl and °F
5. Write the chemical formula of Calgon.
6. Write the monomer units of Nylon-66.

Section B

Answer any FOUR of the following (4X1.5=06 Marks)

1. If the average degree of polymerization of polystyrene is 10^5, calculate its average molecular weight.
2. For the system: $NH_4Cl((s)\ NH_3(g) + HCl\ (g)$ when $P_{NH3} = P_{HCl}$; C=_____; P =_____ and F = _____
3. Define the polymers on the basis of tectacity.
4. Discuss the classification of lubricant with suitable examples.
5. How many grams of $MgCO_3$ dissolved per litre gives 84 ppm of hardness?
6. The pH of a solution is 2.Find out the amount of acid present in a litre of the solution.

Section C

Answer any FOUR of the following (4x2.5=10 Marks)

1. Differentiate Thermoplastics and thermosetting plastics.
2. Write the preparation, properties and applications of PMMA.
3. Discuss Zeolite process for treatment of Water.
4. Outline the salient features of the Phase diagram, highlighting the name of system (areas, curves and point), phases in equilibrium and degree of freedom in each case.
5. A buffer solution contains 0.015 mole of NH_4OH and .0.025 mole of NH_4Cl. Calculate the pH value of the solution. Kb for $NH_4OH = 1.8*10^{-5}$
6. Write the monomers of the following
   Teflon (b) PVA (c) neoprene (d) PLA (e) Nylon-6