Printed Pages-2 University Roll No. .....

Course: B. Tech I Year (Odd Semester Examination)
Second Mid Term Examination 2014-15
AHC-101: Engineering Chemistry

**Time: 1½ Hours** **Total Marks: 20**

**Note:** Attempt **all** questions from **Section-A**, any three from **Section-B** and any three from **Section-C**

## Section - A

**Note: Attempt all questions** $1 \times 5 = 5$

1. mg/L and, ppm are same, justify the Statement.
2. How scale due to $CaSO_4$ may be controlled in boiler?
3. Calculate the number of components and number of degree of freedom in a mixture of $CaCO_3(s)$, $CaO(s)$ and $CO_2$ (g).
4. Define lubrication.
5. Write the structure of monomer of Neoprene.

## Section - B

**Note: Attempt three questions** $3 \times 2 = 6$

1. What are the boiler problems? Discuss calgon conditioning for water to be used in boiler.
2. What would be the pH of the solution obtained by mixing 5 gm. acetic acid and 7.5 gm. of sodium acetate and making the volume equal to 500mL.Dissociation constant of acetic acid at $25^0$C is $1.75X10^{-5}$.
3. Write the structure of Vulcanized rubber.
4. What are Flash and Fire point of liquid lubricants?

## Section – C

**Note: Attempt any three questions** $3 \times 3 = 9$

1. Discuss Ion exchange process **or** Reverse Osmosis for treatment of water.
2. What do you mean by potable water? A zeolite softener was 90% exhausted when 1000L of hard water passed through it. The softener required 100L brine solution containing 10g NaCl/L for regeneration. Find out hardness of water.
3. Draw a neat diagram of water system and discuss it.
4. Write the step by step mechanism of polymerization of vinyl chloride in the presence of Azobis butyro nitrile.