

Printed Pages -2

University Roll no. _____

B.Tech First Year (Even Semester Examination)**Mid - II Examination 2015-16****AHC 1001: Engineering Chemistry****Time 1 Hrs. 30 Minutes****Max. Marks: 20****SECTION -A****NOTE :- Attempt all questions****(1 × 5 = 5 Marks)**

- Q.1 What are boiler problems?
- Q.2 In two component system can four phases exit together or not, Justify.
- Q.3 Write two examples of biodegradable polymers .
- Q.4 What is fire point?
- Q.5 Calculate the strength of HCl (in gm./litre) solution whose pH is 2.5

SECTION -B**NOTE :- Attempt any three questions.****(2 × 3 = 6 Marks)**

- Q.1 Define hardness of water . What happens when water containing temporary hardness is boiled ?
- Q.2 Calculate the change in pH when 50 ml of 0.2 M NaOH is added to one litre buffer solution containing 0.1M CH₃COOH and 0.2 M CH₃COONa. pKa of CH₃COOH is 4.7447.
- Q.3 Write a note on tacticity .
- Q.4 Explain Reverse osmosis process for softening of water with diagram.

(P.T.O.)

SECTION - C**NOTE :- Attempt any three questions.****(3 × 3 = 9 Marks)**

- Q.1 What is phase rule? Apply it to Carbon dioxide system .
- Q.2 2000 litres of hard water was passed through a Zeolite softener for 30 minutes for complete purification. The zeolite bed was found 50 % exhausted and required 100 litres brine solution containing 1 gm. / litre NaCl for regeneration. Calculate hardness of water.
- Q.3 Write preparation and uses of any two of the following polymers :-
(a) Buna - S (b) Teflon (c) PMMA
- Q.4 Discuss the mechanism involved in Thin Film theory of lubrication .

**** THE END ****