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**Second Mid Term (Even Sem.) Theory Examination-2016-17****Sub: - Engineering Chemistry Paper Code:-AHC1101****Time: - 90 Min.****Max. Marks:-20****Section- A***Note: Attempt All Five Questions.*

1×5 = 5 marks

- I. What are boiler problems?
- II. How temporary hardness of water can be removed?
- III. Write two examples of biodegradable polymers.
- IV. Why is annealing of glass carried out?
- V. Which material is being used in the formation of magnetic strips for credit card or debit card?

**Section- B***Note: Attempt Any Three Questions.*

2 × 3 = 6 marks

- I. Write mechanism of free radical addition polymerization process.
- II. Discuss structure of vulcanized rubber and mention its industrial applications.
- III. Discuss the preparation and uses of Pyrex glass.
- IV. How does calgon conditioning process make water suitable to be used in boiler?

**Section- C***Note: Attempt Any Three Questions.*

3 × 3 = 9 marks

- I. 100 L water was purified by a Zeolite softener after which the Zeolite bed required 10 L brine solution containing 0.5 g NaCl/L for regeneration. Find out hardness of water.
- II. Explain with diagram the Reverse Osmosis **OR** Zeolite process for water purification.
- III. Write the preparation of the following polymer.  
a) Nylon 66    b) Bakelite    c) Teflon
- IV. What is Smart material? Discuss Piezoelectric, Pyroelectrics, Ferroelectrics materials (any two) with at least one industrial application.