Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

CY-110

B.E. (All Branches), First Semester

Examination, December 2016

Choice Based Credit System (CBCS)

Chemistry

Time : Three Hours

Maximum Marks: 60

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Explain VSEPR theory with examples.
   b) Define Kohlrausch's law and discuss its applications.

2. a) Discuss various factors affecting the rate of a reaction.
   b) Explain electrochemical theory of corrosion.

3. a) Why is vulcanisation of natural rubber necessary and how is it carried out?
   b) Derive Gibbs-Helmholtz equation.

4. a) Define Photochemical Reaction. Explain chemistry involved in vision.
   b) Write methods of preparation of
      i) Nylon 6:6
      ii) Teflon

5. Write short notes on (any two)
   a) Entropy
   b) Bakelite
   c) Phase diagram of water

6. Calculate the amount of lime (84% pure) and soda (92% pure) required for treatment of 20000 litres of water, whose analysis is as follows:

   $Ca(HCO_3)_2 = 40ppm$; $Mg(HCO_3)_2 = 36.5ppm$; $MgSO_4 = 30ppm$; $CaSO_4 = 34ppm$; $CaCl_2 = 27.75ppm$; $NaCl = 10ppm$

7. a) Write M.O. diagrams of H_2 and N_2 molecules.
   b) Write a note on Arrhenius theory.

8. Write short notes on any two:
   a) First law of Thermodynamics
   b) Order of reaction
   c) Laws of photochemistry

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