

Reg. No. :

Question Paper Code : 51365

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014

First Semester

Civil Engineering

CY 2111/CY 14/080010001— ENGINEERING CHEMISTRY - I

(Common to all branches except Marine Engineering)

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Why do we express hardness of water in terms of CaCO_3 equivalents?
2. Write the principle of break point chlorination.
3. What is the structural change that occurs in an elastomer during vulcanization?
4. Write the preparation and uses of PVC.
5. Distinguish between physisorption and chemisorption.
6. Define enthalpy of adsorption? What is the thermodynamic condition for an adsorption process to be spontaneous?
7. What are the moderators used in nuclear reactor?
8. Write the differences between primary and secondary batteries. Give examples.
9. Define viscosity index. How it is determined?
10. What are the special characteristics of carbon nanotubes?

PART B — (5 × 16 = 80 marks)

11. (a) (i) How is hardness of water determined by EDTA method? (8)
(ii) Explain with a sketch, the various steps involved in the treatment of water for domestic purpose. (8)

Or

- (b) (i) What is reverse osmosis? How is sea water purified using this technique. (10)
(ii) Write short notes on carbonate and phosphate conditioning methods. (6)

