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Total number of printed pages – 2

B. Tech
BSCC 1208

Third Semester (Back / Special) Examination – 2013

CHEMISTRY – II

BRANCH : CHEM, ENV, TEXTILE

QUESTION CODE : D 190

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory and any **five** from the rest.*

The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10
- (a) Is CaCO_3 responsible for the hardness of water ? Justify your Answer
 - (b) Write the name of the Indicator used during the determination of hardness of water by EDTA method.
 - (c) Write the cell reaction for Zinc-air cell.
 - (d) What do you mean by “sacrificial metal” ?
 - (e) What is TEL and What are the additives replace TEL ?
 - (f) Write two names of conducting polymers.
 - (g) A piece of impure zinc and pure zinc are placed in a salt solution. Which will corrode faster and why ?
 - (h) What is *sweetening of petrol* ?
 - (i) Write the monomers of the following :
PS, PTFE, Nylon-6, PMMA
 - (j) Why carbon nanotube has been termed as “ultimate fiber” ?



P.T.O.

2. (a) Calculate the quantity of lime and soda required for softening 50,000 litres of waters containing : $\text{CaCO}_3 = 5.0\text{mg/L}$; $\text{Mg}(\text{HCO}_3)_2 = 7.5\text{mg/L}$; $\text{CaSO}_4 = 13.6\text{mg/L}$; $\text{MgSO}_4 = 12.0\text{mg/L}$; $\text{MgCl}_2 = 2.0\text{mg/L}$; $\text{SiO}_2 = 2.5\text{mg/L}$ 5
- (b) Discuss the electro dialysis method for desalination of Brackish water. 5
3. (a) Describe various methods adopted for protection of corrosion. 5
- (b) Explain the following :
- (i) Corrosion of water filled steel tanks occur below the waterline
- (ii) Corrosion of Iron is prevented by galvanization 5
4. (a) Write down the characteristics of a good fuel. 5
- (b) Why CNG is preferred over LPG ? 3
- (c) How is water gas superior to producer gas ? 2
5. (a) Explain why polyacetylene behaves as a conducting polymer but polyethylene doesn't ? 3
- (b) Why does raw rubber need vulcanization ? 5
- (c) Differentiate between Homopolymer and copolymer and give one example of each. 2
6. Write notes on : 5×2
- (a) Reserve batteries
- (b) Alkaline batteries
7. (a) What do you mean by nano materials and how it is applied in fuel cell ? 5
- (b) What are the advantages of break-point chlorination ? 5
8. (a) Discuss the mechanism of Cationic polymerization 4
- (b) Define Octane and Cetane number. Write their significance 6

