



UA-6015

First Year B. E. (Sem. I & II) Examination

April/May - 2012

Engineering Chemistry

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दृश्यादेव निशानीयाणी विगतो उन्तरवडी पर अवश्य लपवी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
F. Y. B. E. (SEM. 1 & 2)

Name of the Subject :
ENGINEERING CHEMISTRY

Subject Code No. : 6 0 1 5 Section No. (1, 2,.....): Nil

Seat No. :

Student's Signature

- (2) Give reactions and neat diagrams wherever necessary.
(3) Question 1 and 4 are compulsory and carries 20 marks each.
(4) Question 2, 3 and 5, 6 are of 15 marks each.

- 1(a) Fill in the Blanks: 10
- Puzzolona Cement is made up from _____ & _____.
 - _____ Lime soda process is better to remove hardness of water.
 - Sterilization of water is normally done with the help of _____.
 - To provide hardness to the rubber _____ can be carried out.
 - Corrosion is _____ in dry atmosphere.
 - Temporary hardness of water can be removed with the help of _____.
 - The corrosion can be _____ by applying coating of paint on the metal.
 - _____ is an example of thermosetting polymer and _____ is thermoplastic polymer.
- (b) Explain Pilling- Bedworth rule of corrosion in detail. 5
(c) Explain Cold Lime soda Process in detail. 5

- 2 Answer any Three. 15
- Detail the ISI specification of cement
 - Explain Portland cement in detail with its formation.
 - Explain wet and dry process of Portland cement.
 - Detail the methods of treatment of Boiler feed water and explain ion exchange method in detail.
 - Explain different types of Organic coatings.

- 3 Answer any Three 15
1. Explain the mechanism of electrochemical corrosion with the help of an example.
 2. What is RCC? Which one is stronger PCC or RCC explain individual of same.
 3. Explain briefly the scale & sludge formation in boilers.
 4. Describe the structure of Ca-EDTA complex and write the equations showing the color changes in course of reaction of hardness analysis.
 5. Explain Galvanic corrosion in detail.
- 4(a) Fill in the Blanks: 10
1. Full form of BOD is _____.
 2. Temporary hardness of the sea water is due to the dissolution of _____ and _____ salt.
 3. The TEFLON is also known as _____.
 4. _____ gas was released during Bhopal gas tragedy.
 5. _____ is an example of natural refractory.
 6. Diffusion current I_d in polarography is given by _____ equation.
 7. The amount of CO & CO₂ increases in air leads to _____.
 8. Polymerization of any monomer is done by _____ & _____ polymerization method.
- (b) Short answer Questions. 10
1. Write the structure of, Polyester.
 2. Write the harmful effect of Acid rain.
 3. Principle of Calomel Electrode.
 4. Type of Pollutants of air.
 5. Define Absorption Co-efficient
- 5 Answer any Three. 15
1. Define water pollution and its causes.
 2. Write a note on composite materials.
 3. Explain different method of Sewage treatment.
 4. Explain different types of Bio-organic polymers.
 5. Explain mechanism of polymer by anionic polymerization.
- 5 Answer any Three 15
1. Explain the causes of overuses of Natural resources.
 2. Explain Melt spinning.
 3. Explain pH metry in detail.
 4. Explain the importance of different types of Alloys.
 5. Write in brief about different types of batteries.