

## JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

## TEST -2 EXAMINATION- 2016

## B.Tech (Civil) II Semester

COURSE CODE: 10B11CL212

MAX. MARKS: 25

COURSE NAME: Chemistry

COURSE CREDITS: 4

MAX. TIME: 1Hr 30 Min

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

- Q1. Give reasons: 10(2 each)
- Galvanization of iron articles is preferred to tinning.
  - Gelatin is used as protective colloid.
  - Electrode potential of Zinc is assigned a negative value while that of Copper a positive value.
  - In potassium permanganate titrations the end point color varies with pH.
  - Addition of a small amount of acid or alkali to the buffer solution, it resists to change its pH.
- Q2(a). In a given cell  $\text{Al}/\text{Al}^{3+} (0.1\text{M}) \parallel \text{Fe}^{2+} (0.2\text{M})/\text{Fe}$ . Calculate the maximum work that can be obtained from cell. Given that  $E^\circ \text{Al}^{3+}/\text{Al} = -1.66 \text{ V}$  and  $E^\circ \text{Fe}^{2+}/\text{Fe} = -0.44 \text{ V}$ . 2
- Elucidate the Vat electroplating process. 3
- Q3(a). Elaborate the industrial importance of colloidal solutions. 3
- Show that the degree of dissociation of a weak acid is reciprocal of the square root of its concentration. 2
- Q4(a). Discuss the requisites and constituents of a good paint. 3
- The rate constant for first order reaction is given by:

$$\log k (\text{in s}^{-1}) = 14.34 - [1.25 \times 10^4]/T$$

What is the value of : (i) Activation energy and (ii) k at 670K 2