



FACULTY OF ENGINEERING AND INFORMATICS
B.E. I Year (New) (Common to All Branches) (Suppl.)
Examination, January 2012
ENGINEERING CHEMISTRY

Time: 3 Hours]

[Max. Marks: 75

Note : Answer *all* questions from Part A. Answer *any five* questions from Part B.

PART – A

(25 Marks)

1. Define standard electrode potential. What is its significance ? 3
2. Distinguish between primary and secondary batteries. 2
3. Why the work done in isothermal reversible process is more than the adiabatic reversible process ? 3
4. Explain the physical significance of entropy. 2
5. Write a note on Galvanic corrosion. 3
6. What is paint ? What are its constituents ? 2
7. Explain Homo and Co-polymers with an example. 2
8. What are composites ? Give their advantages. 3
9. Define Octane number. What is its significance ? 2
10. Give the characteristics of a good propellant. 3

PART – B

(5×10=50 Marks)

11. a) What is Nernst equation ? Derive it for Metal-Metal ion electrode. 4
- b) Write the cell reaction and calculate the emf of the following all at 25°C : 4
$$\text{Zn(s)}|\text{Zn}^{2+} (0.2 \text{ M}) || \text{Ag}^+ (0.02 \text{ M}) |\text{Ag(s)}.$$

Given that $E_{\text{Zn}/\text{Zn}^{2+}}^{\circ} = +0.76 \text{ V}$, and $E_{\text{Ag}/\text{Ag}^+}^{\circ} = -0.80 \text{ V}$.
- c) What are the advantages of fuel cells ? 2

