



Code No. : 5013/O

FACULTY OF ENGINEERING & INFORMATICS
B.E. I Year (Common to All Branch) Examination, January 2012
ENGINEERING CHEMISTRY (Old)

Time: 3 Hours]

[Max. Marks: 75

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

PART – A

(25 Marks)

1. Differentiate between Extensive and Intensive properties. 2
2. What is entropy ? Explain it's physical significance. 3
3. Define specific and equivalent conductance and give their units. 2
4. What is electrochemical series ? Give its significance. 3
5. What is dry corrosion ? Explain with an example. 3
6. Distinguish clearly between temporary and permanent hardness of water. 2
7. What are Homo –, Hetro and Co-polymers ? Give one example to each. 3
8. Differentiate between thermoplastics and thermosetting resins. 2
9. Give the classification of chemical fuels. 3
10. What is primary battery ? Give one example. 2

PART – B

(5×10=50 Marks)

11. a) What is an adiabatic reversible process ? Derive an expression for work done in this process. 6
- b) Calculate the work done in Joules when 5 moles of an ideal gas expanded isothermally and reversibly from a volume of 2 litres to 20 litres at 27°C. 4
12. a) What is transport number ? How it is determined by Hitorff's method. 7
- b) The equivalent conductances at infinite dilution of CH₃COONa, HCl and NaCl at 25°C are 91.0, 426.16 and 125.45, mhocm²eq⁻¹ respectively. Calculate the equivalent conductance at infinite dilution for acetic acid. 3



13. a) Explain the factors that influence the rate of corrosion. 5
b) Describe the softening of hard water by Ion-Exchange method. 5
14. a) Give the preparation, properties and uses of PVC and Bakelite. 6
b) What are conducting polymers ? Give any three important applications. 4
15. a) What is cracking ? Describe catalytic cracking by fixed bed method. 7
b) Write a note on LPG and CNG. 3
16. a) Derive Clausius – Clapeyron equation. What are its applications ? 6
b) Write a note on potentiometric acid-base titrations. 4
17. a) Write a note on the following : 6
i) Galvanic corrosion
ii) Sacrificial anodic protection.
- b) How will you determine the pH of a solution by using Glass electrode ? 4
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