I Year ODD SEM

| Reg.No.: | | | | | | | | |
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VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

**Question Paper Code: 4001**

B.E. / B.Tech. DEGREE SUPPLEMENTARY EXAMINATIONS – FEB. / MAR. 2020
First Semester
Computer Science and Engineering
U15CH101– CHEMISTRY
(Common to Electrical and Electronics Engineering, Electronics and Communication Engineering, Information Technology & Biotechnology)
(Regulation 2015)

Time : Three Hours Maximum : 100 Marks

Answer ALL the questions

PART – A

(10 x 2 = 20 Marks)

1. Define Single Electrode Potential.
2. Li battery is the cell of future why?
3. How electrical property of nano particles differ with bulk materials.
4. Mention any two applications of Nano particles.
5. Classify the types of polymers based on the Structure.
6. What is tacticity of polymer?
7. Define entropy.
8. State the expression for second law of thermodynamics.
9. Define Galvanic Corrosion.
10. What do you mean by Pilling Bedworth Ratio?

## PART – B

(5 x 16 = 80 Marks)

11. a) i. Explain the construction and working mechanism of Pb-Acid batteries with its uses. (10)

ii. Confer a brief note on Solar Cells and its applications. (6)

(OR)

b) i. Illustrate the construction and working principle of $H_2$-$O_2$ fuel cells. (10)

ii. Mark how Calomel electrode is constructed and used. (6)

12. a) i. Compare Top down and bottom up approach in synthesis of nanomaterials. (10)

ii. Discuss optical property and surface plasmon resonance of nano particles. (6)

(OR)

b) i. Give in detail about the CVD and precipitation method of synthesizing nano particles. (10)

ii. Point out the differences between the Nano and Bulk materials. (6)

13. a) i. How PMMA and Nylon 6,6 are prepared? Give its uses. (10)

ii. Compare the arrangement of monomeric repeating units with respect to the stereo specificity. (6)

(OR)

b) i. Predict the conducting mechanism of polypyrrole. (10)

ii. Give the preparation of PC with two applications. (6)

14. a) i. Derive the Thermodynamic relation of Gibbs Free Energy and Enthalpy. (10)

ii. Derive the expression of Entropy for an isothermal expansion of an ideal gas. (6)

(OR)

b) Derive the equation which relates the standard free energy change and equilibrium constant and relation between Gibbs free energy and change in enthalpy.

15. a) i. Explain the components of Paints. (10)

ii. Discuss the types of differential aeration corrosion. (6)

(OR)

b) i. Discuss the reaction mechanism when metal bar is exposed to Oxygen and Hydrogen environment. (10)

ii. Write the short notes on electroless Nickel plating with suitable applications. (6)

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