| Reg.No.: | | | | | | | | |
|---|---|---|---|---|---|---|---|---|

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

**Question Paper Code: 4002**

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – March/April 2023

First Semester

Electrical and Electronics Engineering

**U19CH101 – CHEMISTRY FOR ELECTRICAL AND ELECTRONICS ENGINEERS**

(Common to Electronics and Communication Engineering)

(Regulation 2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

| Knowledge Levels (KL) | K1 – Remembering | K3 – Applying | K5 - Evaluating |
|---|---|---|---|
| | K2 – Understanding | K4 – Analyzing | K6 - Creating |

PART – A

(10 x 2 = 20 Marks)

| Q.No. | Questions | Marks | KL | CO |
|---|---|---|---|---|
| 1. | Recall the chemicals used for the disinfection of municipal water. | 2 | K1 | CO1 |
| 2. | State the unit of hardness. | 2 | K1 | CO1 |
| 3. | List any two application of Bakelite resin. | 2 | K3 | CO2 |
| 4. | State any two difference between addition and condensation polymerization. | 2 | K4 | CO2 |
| 5. | Recall any two difference between nanoparticle and bulk material. | 2 | K2 | CO3 |
| 6. | State any two properties of nano rods. | 2 | K1 | CO3 |
| 7. | Mention the role of coolants in nuclear reactors. | 2 | K4 | CO4 |
| 8. | State the principle of converting wind energy to electrical energy? | 2 | K2 | CO4 |
| 9. | List any two method adopted to prevent galvanic corrosion. | 2 | K1 | CO5 |
| 10. | "A pure metal rod half immersed vertically in water starts corroding at the bottom"- Give reason. | 2 | K5 | CO5 |

## PART – B

(5 x 16 = 80 Marks)

| Q.No. | | | Questions | Marks | KL | CO |
|---|---|---|---|---|---|---|
| 11. | a) | | Discuss the colloidal, carbonate, phosphate and calgon conditioning of boiler feed water. | 16 | K2 | CO1 |
| | | | (OR) | | | |
| | b) | i. | Discuss in detail the ion – exchange method of external conditioning of water. | 10 | K3 | CO1 |
| | | ii. | Discuss the reverse osmosis method of purifying water. | 6 | | |
| 12. | a) | i. | Explain the mechanism of free radical polymerization with an example. | 8 | K2 | CO2 |
| | | ii. | Explain the addition and condensation polymerization with examples. | 8 | K2 | |
| | | | (OR) | | | |
| | b) | | Describe the preparation, properties and uses of PMMA, PE and nylon 6,6 | 16 | K4 | CO2 |
| 13. | a) | | Discuss the hydrothermal & chemical vapour deposition of the synthesis of Nanomaterials. | 16 | K3 | CO3 |
| | | | (OR) | | | |
| | b) | | Describe the precipitation and thermolysis method of synthesizing nanoparticles. | 16 | K5 | CO3 |
| 14. | a) | | Illustrate the working priniciple of solar cell with its applications. | 16 | K1 | CO4 |
| | | | (OR) | | | |
| | b) | | Discuss the construction of a lead acid accumulator with charging and discharging characteristics of the battery. | 16 | K2 | CO4 |
| 15. | a) | | Describe the various factors influencing the rate of corrosion. | 16 | K1 | CO5 |
| | | | (OR) | | | |
| | b) | | Describe the constituents of paints in detail with examples. | 16 | K2 | CO5 |