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Roll No.

**B.E (FT) END SEMESTER EXAMINATIONS – APRIL/MAY 2024**

Computer Science and Engineering  
**Subject code: CY6251      Subject Title: Engineering Chemistry**  
(Regulation 2018 - RUSA)

Time: 3 Hours

Answer ALL Question

Max. Marks 100

**PART-A (10 x 2 = 20 Marks)**

1. Illustrate thermoplastic with an example
2. Write the significance of  $T_g$  ?
3. State Beer-Lambers Law?
4. Why wavelength of 480 nm is fixed in UV-Visible spectrometer for Fe estimation?
5. List any four industrial application of catalysis.
6. Define the term "autocatalysis" with an example.
7. Deduce the change in entropy from solid phase to liquid phase.
8. Differentiate 1D and 2D in nanomaterials.
9. Sketch the diagram of fabricated NMOS.
10. What are characteristics of Insulating materials?

**PART – B ( 8 x 8 = 64 marks) (Answer any 8 questions)**

11. Explain the mechanism of formation of Polyethylene polymer by Free radical Polymerization
12. With a neat diagram, brief out the emulsion polymerization with its merits and demerits
13. Explain the following terms: a) chemiluminescence b) Photosensitization c) Fluorescence d) Phosphorescence
14. Construct the block diagram of UV-Visible spectroscopy, label the components of it and state any four application of UV-Visible spectroscopy.
15. Explain Langmuir isotherm model and derive its equation?
16. Draw the various adsorption isotherms and explain the curves.
17. Derive an equation that relates vapor pressure of a substance with temperature and enthalpy of vaporization.
18. How are Nanowires prepared by electrospinning?
19. Describe the single layer fabrication of circuit board
20. Write few application of composite material that finds application in electronic and electrical Components ?
21. Discuss the steps involved in fabrication of CMOS.
22. List down the extensive and Intensive characteristics of semiconductors

**PART – C ( 2 x 8 = 16marks)**

23. What are Photoresist polymers? Explain in detail about the two photoresist polymers?
24. Discuss any four size dependent properties of nanomaterials.