



ANNA UNIVERSITY COIMBATORE
B.E. / B. TECH. DEGREE EXAMINATIONS : JAN – FEB 2009
REGULATIONS : 2008
FIRST SEMESTER – COMMON TO ALL BRANCHES
080010001 -ENGINEERING CHEMISTRY - I

Time 3 Hours

Max: 100 Marks

PART A (20 x 2 = 40 Marks)

Answer ALL Questions

1. Why is hardness expressed in terms of calcium carbonate equivalent?
2. How is uv light useful for achieving disinfection of water?
3. What is calgon? What is its use in water technology?
4. What is reverse osmosis?
5. What are addition polymers? Give one example.
6. What do you understand by disproportionation of polymer chains?
7. Why is Teflon behaving non-sticky?
8. How is SBR prepared?
9. What are the differences between absorption and adsorption?
10. What are the limitations of Freundlich adsorption isotherm?
11. Write a suitable equation commonly applied to the adsorption of liquids on solids?
12. What do you understand by ion exchange adsorption? Give one example.
13. Write any one nuclear fusion and fission reaction.
14. What are the advantages of using lithium as anode in batteries?
15. Write any four methods adopted for harnessing wind energy?
16. Why are the electrodes used in fuel cells porous?
17. What are neutral refractories? Give one example.
18. Define flash and fire points.

19. Why is graphite used as a lubricant whereas other allotropes of carbon are not?
20. What are the applications of carbon nano tubes?

PART – B (5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. a. How is hardness of water determine EDTA method? (6)
 b. Explain the following boiler troubles suggesting the remedial methods:
 (i) Sludge and scale formation (ii) caustic embrittlement. (6)
22. a. Explain condensation polymerization taking one example. Give any three important properties of condensation polymers. (6)
 b. How are the following polymers prepared?
 (i) PVC (ii) polyurethane (iii) polycarbonate (6)
23. a. Describe the construction of nickel cadmium battery. Explain its working with the required cell reactions. (6)
 b. Explain the role of adsorption in catalysis? Give examples. (6)
24. a. What is natural rubber? What are its drawbacks? How are they rectified through vulcanization. (6)
 b. What are the advantages of polymer composites? Explain using FRP as an example (6)
25. a. Derive Langmuir adsorption isotherms. What are it limitations? (6)
 b. Explain how demineralization of water is done in water technology? (6)

26. a. Explain the power generation from light water nuclear reactor (6)
b. Describe the conversion of solar energy into electrical energy (6)
27. a. Explain the construction and functioning of a lead acid accumulator? (6)
b. What are the requirements of a good refractory (6)
28. a. What are abrasives? How are they classified? Give two examples for each category with their important properties. (6)
b. How are alumina and magnesite bricks manufactured? (6)

*****THE END*****