ANNA UNIVERSITY OF TECHNOLOGY, COIMBATORE

B.E. / B.TECH. DEGREE EXAMINATIONS : DEC 10 / JAN 11

REGULATIONS : 2008

FIRST SEMESTER

080010001 - ENGINEERING CHEMISTRY I

(COMMON TO ALL BRANCHES)

TIME: 3 Hours **Max. Marks: 100**

PART - A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1.What is calgon conditioning?

2. What are scales and sludges?

3.Define the term break point chlorination?

4. a) Why is water softened before using in boiler?

(or)

b) What are the salts responsible for carbonate and non-carbonate hardness of water?

5.Why thermosetting plastics cannot be remoulded?

6. What is degree of polymerization?

7. a) What are the uses of Perlon - U?

(or)

b) What are the characteristics of FRP?

8. What are Composites?

9. Mention any four applications of adsorption?

10. What is the effect of temperature and pressure on the adsorption of hydrogen gas on charcoal?

11. Define ion – exchange adsorption?

12. a) What is catalytic poisoning?

(or)

b) What are the limitations of Freundlich's adsorption isotherm.

13. Distinguish between nuclear fission and fusion reactions?

14. How is NICAD battery constructed?

15. What are non – conventional energy sources?

16. a)What is fissile nucleides and fertile nucleides?

(or)

b) What are the applications of solar cells?

17. What are neutral refractories?Give one example?

18. What are solid lubricant? Give one example.

19. Define Cloud point?

20. a) Under what situations solid lubricants are used?

(or)

b) Explain moh's scale for different abrasives?

PART - B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. a) Discuss the Ozonation and UV methods of disinfection? 4

b) How is temporary hardness of water estimated by EDTA method? 8

22. a) Distinguish between addition and condensation polymerizations with one example each? 8

b) Mention the properties of engineering plastics? 4

23. a) Distinguish between physisorption and chemisorption? 6

b) Mention any two factors which influence adsorption of a gas on a solid? 6

24.a) What is reversible battery?Describe the construction and working of Lead acid storage battery with reactions occurring during charging and discharging cycles 8

b) What are the functions of the following in a nuclear reactor?

i) Coolant ii) Control rods 4

25. a) What are Carbon nanotubes? Explain any three of their important applications? 8

b) What are abrasives? How are they classified? 4

26.a) Explain the demineralization of water by ion-exchange process.How are exhausted cation and anion exchange resins regenerated? 8

b) Distinguish thermoplastics and thermosetting plastics? (Any four) 4

27 . a) What is the role of activated carbon in air and water pollution control? 8

b) How is current generated in a wind mill? Explain. 4

28.a) How are refractories classified ?Explain with examples? 6

b) Write a note on flash and fire point of the lubricants? 6

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