

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E / B.Tech - (Common to ALL Branches) Title of the paper: Applied Chemistry/ Applied Chemistry - I

Semester: I

Max. Marks: 80

Sub.Code: 6C0004/ ET104/ 3ET104/ 4ET104/ 5ET104

Time: 3 Hours

Date: 07-05-2007

Session: AN

PART – A

(10 x 2 = 20)

Answer ALL the Questions

1. What are scales and sludges?
2. Describe the principle involved in the removal of hardness of water by lime – soda method.
3. Distinguish between thermoplastics and thermosetting plastics.
4. Write examples for addition polymerization and condensation polymerization.
5. What do you mean by ‘eutrophication’?
6. Define the term ‘Biological Oxygen demand’ (BOD).
7. Give any two examples for special cements and their composition.
8. How are the refractories classified? Give example for each category.
9. What is oxygen balance of explosives?
10. State the advantages of powder metallurgy.

PART – B

(5 x 12 = 60)

Answer All the Questions

11. (a) What are zeolites? Explain the water treatment process using zeolites.
Give the advantages and disadvantages of the process. (8)
(b) 0.5 g of calcium carbonate was dissolved in dilute in hydrochloric acid and diluted to 500 ml. 50 ml of this solution required 40 ml of EDTA solution for titration. 50 ml of hard

water sample required 25 ml of EDTA solution. Calculate the total hardness of the water sample.

(or)

12. What are the essential requirements of potable water? Explain the sequential processes used for treating potable water.

13. (a) What do you mean by compounding of plastics? Explain the different constituents added to plastics and their functions. (8)

(b) What do you mean by functionality of monomers? Give its significance. (4)

(or)

14. (a) Explain the moulding of thermoplastic resin by injection moulding.

(b) Write a short note on preparation, properties and uses of bakelite.

15. Write short notes on the following:

(a) Green house effect

(b) Ozone layer depletion

(c) Biochemical effect of CO and lead.

(or)

16. With a suitable flow diagram briefly explain the domestic sewage treatment process

17. (a) With suitable chemical equations, explain the burning process of cement manufacturing.

(b) Explain the properties thermal spalling and porosity of refractories. How is thermal and porosity are related?

(or)

18. (a) Explain the chemistry involved in the setting and hardening of cements.

(b) What is meant by refractoriness? Explain PCE test for determining the same.

19. (a) What are explosives? How are they classified?
(b) Describe the different methods for preparing metal powders.
- (or)
20. (a) List out the characteristics of a good rocket propellant.
(b) Explain the sintering process in powder metallurgy.