Register Number | | | | | | | |

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E/B.Tech-AERO/M&P/IT/CSE/MECH/ETCE/BTE

Title of the Paper: Applied Chemistry – I/Applied Chemistry

Max. Marks: 80

Sub. Code: 4ET104/5ET104/6C0004 (2004/05/06) Time: 3 Hours

Date: 04/12/2010 Session: FN

PART - A (10 X 2 = 20)

Answer ALL the Questions

1. Differentiate between scale and sludge.

2. What is break point chlorination?

3. Define the term functionality. Give one example.

4. What is a thermoplastic? Give one example.

5. What is acid rain?

6. What is BOD? Mention its significance.

7. What is the function of gypsum in cement?

8. Define the term refractoriness.

9. What is the composition of RDX?

10. What is powder metallurgy?

PART – B (5 x 12 = 60)

Answer All the Questions

11. (a) What is lime-soda process of water softening? Give the chemical reactions involved during the softening process.
(b) With a neat diagram explain the reverse osmosis method of desalination.

(or)

12. (a) How will you estimate hardness of water by EDTA method? Explain.
(b) Describe the principle involved in the zeolite process of treatment of water.

13. (a) Explain the terms with two suitable examples
(i) Addition polymerization
(ii) Co-polymerization.
(b) What are the ingredients used in compounding of plastics? Explain their function.

(or)

14. (a) With chemical equations, show the preparation of Bakelite. Mention its important properties.
(b) With a neat diagram explain the functioning of a Extrusion moulding machine.

15. (a) What is COD? How is it determined?
(b) Explain the trickling filter method of sewage treatment.

(or)

16. (a) Discuss the Biochemical effects of Lead and Mercury.
(b) How is Ozone formed and depleted in nature? Explain.

17. a) Explain the manufacture of cement by Wet process.
b) What are refractories? How are they classified? Give examples.

(or)

18. (a) Write the chemical reactions that take place during setting and hardening of cement.

    (b) Explain the significance of the following properties of refractory materials. (i) Porosity (ii) Thermal spalling.

19. (a) What are explosives? How are they classified? Give examples.

    (b) Explain the following methods of preparation of metal/ alloy powder (i) Atomization (ii) Electrolytic process.

(or)

20. (a) What are rocket propellants? Mention their important characteristics.

    (b) Write a brief note on

    (i) Compacting

    (ii) Sintering.