

# SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act,1956)

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

Title of the Paper :Applied Chemistry – I

Max. Marks :80

Sub. Code :4ET104-5ET104-6C0004

Time : 3 Hours

Date :19/12/2009

Session :FN

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## PART - A

(10 x 2 = 20)

Answer ALL the Questions

1. Distinguish between hard water and soft water
2. What is break point chlorination?
3. What is meant by degree of polymerization?
4. Define: Functionality of monomers
5. What are the causes for acid rain?
6. What is BOD? Mention its importance
7. What is alumina cement? How is it made?
8. What is meant by refractoriness under load?
9. Define the term: Powder metallurgy
10. What are detonators?

## PART – B

(5 x 12 = 60)

Answer All the Questions

11. (a) What is the principle involved in the determination of hardness of water by EDTA method?  
(b)Mention the chemical reactions involved during the softening of water by lime-soda process.  
(or)
12. (a) What are scales and sludges? Discuss the harmful effects of scales and sludges.  
(b) With a neat sketch describe electro dialysis method of desalination.
13. (a) Differentiate thermoplastics from thermosetting plastics.

- (b) Explain with suitable examples the following terms:  
(i) Co-polymerization      (ii) Compounding of plastics  
(or)

14. (a) With a neat sketch explain transfer moulding.  
(b) Explain the preparation of 1. PVC 2. Bakelite
15. (a) What is COD? How is it determined?  
(b) What are the gases responsible for greenhouse effect?  
Mention the consequences of green house effect.  
(or)
16. (a) How is ozone formed and depleted in nature? What is the impact of Ozone depletion in nature?  
(b) Discuss the biochemical effects of Pb and Hg.
17. (a) What are the raw materials used for the manufacture of Portland cement? Explain their functions.  
(b) What are refractories? How are they classified? Give examples.  
(or)
18. (a) Describe the process of setting and hardening of cement giving the chemical reactions involved.  
(b) Explain thermal spalling and porosity of refractories.
19. (a) What are the various steps involved in the manufacture of metal/alloy powder? Explain  
(b) What are the important characteristics of an explosive?  
Explain  
(or)
20. (a) Explain the following processes: 1. Compacting 2. Sintering  
(b) Discuss the advantages and limitations of powder metallurgy.