

# SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act,1956)

Course & Branch :B.E/B.Tech - AERO/AUTO/BIN/BME/BTE/  
CHEM/CIVIL/CSE/E&C/ECE/EEE/E

Title of the Paper :Engineering Chemistry

Max. Marks :80

Sub. Code :6C0072

Time : 3 Hours

Date :17/05/2010

Session :AN

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## PART - A

(10 x 2 = 20)

Answer ALL the Questions

1. 50 ml of a sample of water has a hardness equivalent to 15ml of 0.02 N  $\text{CaSO}_4$ . What is the hardness in ppm?
2. What are disinfectants? Give examples.
3. What do you mean by electrode potential?
4. Write down the electrode reactions of a calomel electrode.
5. What is the principle of providing a metallic coating over a metal?
6. How is corrosion prevented by an oxide film?
7. What are the requirements of rocket propellants?
8. What do you mean by sensitivity of an explosive?
9. Define the term toxicant.
10. What do you mean by local effect and systemic effect?

## PART – B

(5 x 12 = 60)

Answer All the Questions

11. (a) Write down briefly on desalination. Discuss any one important method used.  
(b) Write a note on break point chlorination.

(or)

12. (a) With the help of chemical equations explain the Zeolite process of softening of water.  
(b) What are the requirements of potable water?
13. (a) What are reference electrodes? Write a note on standard hydrogen electrode.  
(b) Write down any four applications of electrochemical series.  
(or)
14. (a) What are concentration cells? Write a note on electrolyte concentration cells.  
(b) What is Galvanic cell? How does it function? Illustrate with an example.
15. (a) Discuss the mechanism of electrochemical corrosion.  
(b) Write a note on the surface preparation for metallic coating.  
(or)
16. (a) What do you mean by electroless plating? Discuss the principle and process of electroless plating of nickel.  
(b) Write a note on inhibitors.
17. (a) Discuss how and primary explosive with suitable examples.  
(b) Write a note on the classification of propellants.  
(or)
18. (a) Write a note on high explosives  
(b) Define oxygen balance. Calculate the oxygen balance for trinitrotoluene. How it can be made a good explosive?
19. (a) Write short notes on  
(a) Minamata disease  
(b) Acute and chronic effects  
(c) Non-nutritive sweeteners.  
(or)
20. (a) Discuss the biochemical effects of lead and sulphur dioxide.  
(b) Write a note on the classification of food additives.