**Reg. No. \_\_\_\_\_\_\_\_**

**Karunya University**

**(Karunya Institute of Technology and Sciences)**

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

**Supplementary Examination - June 2011**

**Subject Title: APPLIED CHEMISTRY Time: 3 hours**

**Subject Code: CH106 Maximum Marks: 100**

#### **Answer ALL questions**

**PART – A (10 x 1 = 10 MARKS)**

1. What is functionality of a monomer?

2. Mention any two moulding constituents.

3. Hard water cannot form lather with soap – why?

4. What is the chemical name of calgon?

5. How is net calorific value calculated from gross calorific value?

6. Give two examples for antiknocking agents.

7. Define electrochemical series.

8. What type of corrosion takes place when zinc is partially immersed in aqueous NaCl solution?

9. Define deamination.

10. Write any one electrical application of nano tubes.

**PART – B (5 x 3 = 15 MARKS)**

11. How is Nylon-6.6 prepared by condensation polymerization?

12. Write a note on break point chlorination.

13. What are the significances of proximate analysis?

14. What are the applications of concentration cell?

15. How is absolute alcohol obtained from rectified spirit?

**PART – C (5 x 15 = 75 MARKS)**

16. a. Explain the cationic mechanism of polymerization. (10)

b. Write the applications of polymers. (5)

(OR)

17. a. Describe the method of injection moulding with a neat diagram. (7)

b. Write the preparation and uses of polyester resin and bakelite. (8)

18. a. What is the principle involved in the estimation of hardness by EDTA method and alkalinity method. (5)

b. Give an account of ion exchange process of softening of hard water? (10)

(OR)

19. a. Explain electro dialysis process of desalination with a neat diagram. (10)

b. Calculate the temporary, permanent and total hardness of a water sample containing Ca(HCO3)2=18.2 mg/*l*; Mg (HCO3)2 =8.5 mg/*l*; MgCl2 = 7.3 mg/*l*; Ca SO4 =12.5 mg/*l*.(5)

20. a. How are the byproducts recovered in Otto Hoffman’s coke oven process? (5)

b. How is synthetic petrol manufactured by Fischer – Tropsch process? (10)

(OR)

21. a. Write note on solar power plants and solar cells. (5)

b. Explain flue gas analysis using Orsat’s apparatus. (10)

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22. a. Give an account of the mechanism of rusting of iron. (5)

b. How is corrosion controlled by sacrificial anodic protection and using anodic inhibitors.

(10)

(OR)

23. a. Derive Nernst equation. (5)

b. Explain the working of lead acid batteries. (10)

24. a. Describe the manufacture of ethyl alcohol from molasses. (10)

b. Write note on nano tubes. (5)

(OR)

25. a. Give an account of the different steps involved in fabrication of semiconductors. (10)

b. What are the applications of bio-technology? (5)