



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PHYSICS & MATHEMATICS

THIRD SEMESTER – NOVEMBER 2011

CH 3202/3200 - ADVANCED GENERAL CHEMISTRY FOR PHYS. & MATHS

Date : 11-11-2011

Dept. No.

Max. : 100 Marks

Time : 9:00 - 12:00

Part- A

Answer **ALL** questions.

(10 × 2 = 20 marks)

1. What is dipole – dipole interaction?
2. Ethanol has higher boiling point than ether – why?
3. Write the nitration reaction of naphthalene.
4. Give one method of preparation of thiophene.
5. State I law of Thermodynamics.
6. What is Kohlrausch's law.
7. What are carbohydrates?
8. What is the function of isomerase.
9. Mention the importance of manures.
10. List two uses of radioisotopes.

Part – B

Answer any **EIGHT** questions.

(8 × 5 = 40 marks)

11. Explain inter and intra molecular hydrogen bonding with suitable example.
12. a) What is Ionic radius?
b) Write Reimer – Teimann reaction of furan.
13. What are chromophore and auxochromes? Give examples for each.
14. Explain the Haworth's synthesis of naphthalene.
15. Derive Kirchoff's equation.
16. Describe the working principle of Calomel electrode.
17. Define the following terms a) Combustion b) Heat of formation.
18. a) Draw the D and L isomers of glucose.
b) What are peptides? How are they formed?
19. Explain the lock and key mechanism of enzymes.

20. Discuss the secondary structure of protein.
21. Give a brief description on fractional distillation of petroleum.
22. How will you prepare 2,4-D and 2,4,5-T?

Part-C

Answer any **FOUR** questions.

(4 × 10 = 40 marks)

23. a) Discuss the separation of lanthanides by ion exchange method.
b) Write the consequences of lanthanide contraction. (8+2)
24. a) Give any two methods of synthesis of pyridine.
b) Write the chlorination and nitration reaction of anthracene.
25. a) Draw the structure of penicillin and give its uses.
b) What is nuclear fission? (5+5)
26. a) Explain the conductometric titration curve for AgNO₃ vs KCl solution. (5+5)
b) Write short notes on non renewable energy.
27. Explain Born-Haber cycle with an example.
28. Discuss the various types of soil.

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