

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

SECOND SEMESTER – NOVEMBER 2009

CH 251 - GENERAL CHEMISTRY-II

Date & Time: 14/11/2009 / 9:00 - 12:00 Dept. No.

Max. : 100 Marks

PART A

Answer all the questions

10 x 2 = 20

1. Why ethanol is soluble in water?
2. Why acetic acid in benzene shows the molecular weight of 120 instead of 60?
3. Define chromophore.
4. Give any one method of preparation furan.
5. What is aspirin? Give its structure.
6. State the first law of thermodynamics.
7. Define activation energy.
8. State Beer Lambert's law.
9. How is bakelite prepared?
10. Mention any two risks of genetic engineering.

PART B

Answer any eight questions

8 x 5 = 40

11. Explain the types of hydrogen bonding with examples.
12. Discuss the differences between n- and p- type semiconductors.
13. What is lanthanide contraction? Explain.
14. How is naphthalene prepared by Haworth synthesis?
15. Explain the nitration of pyrrole with mechanism.
16. Describe the classification of dyes based on the structure.
17. State Kohlrausch's law and explain the significance with an example.
18. Derive the rate expression for I order reaction.
19. Explain the vulcanization of rubber.
20. Discuss the double helical structure of DNA.
21. Outline the process of replication of DNA.

22. Explain any two methods of prevention of corrosion.

PART C

Answer any four questions

4 x 10 = 40

23. Write a note on the principle and process involved in the separation of lanthanides by ion-exchange chromatography.
24. a) How are the following prepared?
i) Congo red ii) malachite green
b) Explain the mechanism of nitration of naphthalene. (5+5)
25. a) Discuss the different types of catalysis.
b) Draw and explain the structure of t-RNA. (5+5)
26. What are conductometric titrations? Explain the different types of acid-base titrations using them.
27. a) Draw and explain the working principle of calomel electrode.
b) Explain any two methods of determination of order. (5+5)
28. a) How is nickel estimated by photocolourimetry?
b) How are polymers classified? Explain with examples. (5+5)
