

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – PHYSICS

FOURTH SEMESTER – APRIL 2022

16/17/18UCH4AL01 – GENERAL CHEMISTRY FOR PHYSICS-II

Date: 27-06-2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

Part-A

Answer ALL questions.

(10 x 2 = 20)

1. Give any two differences between equivalence point and end point.
2. Differentiate accuracy and precision.
3. List the types of crystals.
4. Mention the properties of ionic crystals.
5. Draw the structure of sucrose.
6. Name the different mordants used in dye industry.
7. State first law of thermodynamics.
8. Define enthalpy.
9. Specify any two differences between solar cell and photo voltaic cell.
10. What is galvanic cell?

Part B

Answer any EIGHT questions.

(8 x 5 = 40)

11. What are the requisites of a primary standard? Give examples.
12. i) What is the molarity of a solution formed from 6.75 g of NaCl dissolved in water to make a solution with a total volume of 452 mL.
ii) Calculate the normality of 0.53 g/100 mL solution of Na₂CO₃.
13. Differentiate amorphous and crystalline solids.
14. Explain the crystal structure of zinc blende with a neat diagram.
15. What is replication and translation in DNA?
16. How are dyes classified based on their structure?
17. What are carbohydrates? Explain its classification with examples.
18. Derive Kirchhoff's equation.
19. Explain the different types of glass with examples.
20. The solubility of AgCl in water at 25 °C is 0.00358 g/L. Calculate its solubility product at 25 °C.
21. Write a note on permeable and impermeable wares.
22. Enumerate the applications of radio isotopes in the field of medicine.

Part C

Answer any FOUR questions

(4 x 10 = 40)

23. a. Describe the different types of determinate errors. (6)
b. Write a note on the following: i) Mole fraction ii) Molality. (4)
24. a. How will you determine the lattice energy using Born-Haber cycle? (5)
b. Discuss the structure of cesium chloride with a neat sketch. (5)
25. a. Distinguish reducing and non-reducing sugars. (5)
b. What is genetic engineering? Mention the benefits of genetic engineering in humans. (5)
26. a. Enumerate the characteristics of a dye. (5)
b. What happens to equivalent conductance at infinite dilution? Explain. (5)
27. a. Describe the principle and uses of conductometric titrations. (5)
b. Write five differences between nuclear fission and fusion reaction. (5)
28. a. Discuss the working of lead-acid storage battery with a neat sketch. (5)
b. Explain the principle and working of a hydrogen fuel cell. (5)

#####