



# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

U.G. DEGREE EXAMINATION – ALLIED

THIRD SEMESTER – APRIL 2023

**16/17/18UCH3AL01 – GENERAL CHEMISTRY FOR PHYSICS-I**

Date: 10-05-2023

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

## PART – A

Answer ALL questions

(10 x 2 = 20 Marks)

1. What is the difference between double salt and a complex?
2. Why transition metals are colored?
3. Name any two groups having +I effect.
4. Define geometrical isomerism.
5. Outline the uses of buffer solutions.
6. What is EMF of a cell?
7. List any two differences between order and molecularity.
8. State Stark-Einstein law.
9. Point out the BIS specifications of drinking water.
10. Enumerate the uses of polymers.

## PART – B

Answer any EIGHT questions

(8 x 5 = 40 Marks)

11. Mention the postulates of Werner's theory.
12. Explain the role of hemoglobin as complex in humans.
13. Discuss the significance of resonance in stability of molecules.
14. Illustrate the optical isomerism exhibited by lactic acid.
15. Derive the solubility product of a sparingly soluble salt.
16. Outline the principle and working of a galvanic cell with a neat sketch.
17. Distinguish thermal and photochemical reactions.
18. Derive the rate equation of a second order reaction.
19. How will you purify hard water by ion exchange method?
20. Explain the addition polymerization with an example.
21. List the differences between temporary and permanent hardness.
22. What is chemiluminescence? Explain the role and mention its uses.

## PART – C

Answer any FOUR questions

(4 x 10 = 40 Marks)

23. i) How is splitting in octahedral complexes is done according to CFT?  
ii) Explain the mechanism of  $SN^1$  reaction with an example.
24. i) Discuss the different methods of differentiating cis and trans-isomers.  
ii) Derive Nernst equation and list the uses.
25. i) Enumerate the methods for prevention of corrosion.  
ii) Compare electrolytic and electro chemical cell
26. i) Discuss the various methods of determining order of a reaction.  
ii) Write a note on fluorescence and phosphorescence.
27. How is hardness of water estimated by EDTA method?
28. i) Explain the method of purifying water using RO process.  
ii) Compile the difference between thermosetting and thermos plastics.

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