# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**U.G.** DEGREE EXAMINATION –**ALLIED**

SECOND SEMESTER – **APRIL 2023**

**UCH 2303 – CHEMISTRY FOR PHYSICS**

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. Define molarity.
2. What is end point?
3. Name any two examples of double salts.
4. Give any two defects of VBT.
5. State the definition of Lewis acid.
6. Outline the principle of secondary battery.
7. Point out the rate equation and unit of a second order reaction.
8. What is quantum yield?
9. Enumerate the advantages of activated charcoal treatment of water.
10. Why recycling of polymers is done?

## PART – B

**Answer any EIGHT questions** **(8 x 5 = 40 Marks)**

11. List the requisites of a primary standard solution.
12. Calculate the normality of the following: i) solution obtained by dissolving 0.437 g of NaOH in 250 ml of water ii) 0.378 M $KMnO_4$
13. Outline the rules for naming a complex according to IUPAC nomenclature.
14. Mention the postulates of Werner's Theory of complexes.
15. Derive Henderson equation of an acid.
16. Compare electrolytic and electrochemical cell.
17. Explain the factors affecting rate of a reaction.
18. Write a note on photosensitization with an example.
19. Elaborate the disinfection of drinking water using ozone.
20. Compile the synthesis and uses of Bakelite.
21. Discuss the significance of Eriochrome -Black T as an indicator.
22. What are biodegradable polymers? Explain the role and the uses.

## PART – C

**Answer any FOUR questions** **(4 x 10 = 40 Marks)**

23. Explain the various types of errors with examples.
24. a) Elaborate the classification of ligands.
    b) Find the geometry and hybridization of $[CoF_6]^{3-}$ using VBT.
25. Discuss the principle and working of lead acid and lithium-ion battery.
26. a) Distinguish thermal and photo chemical reactions.
    b) Derive the rate equation of a first order equation.
27. a) How will you estimate the hardness of water using EDTA titration?
    b) Describe the RO process of desalination of brackish water.
28. a) Give the differences between addition and condensation polymerization.
    b) Explain the photochemical process using Jablonski diagram with a neat sketch.

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