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TOPICS FOR INTERNAL ASSESSMENT ASSIGNMENTS (2010-11)

Course: M.Sc. CHEMISTRY (Previous)

Note: Students are advised to read the separate enclosed instructions before beginning the writing of assignments.

Out of 15 Internal Assignment marks per paper, 5 marks will be awarded for regularity (attendance) to Counseling/ Contact Programme/ Practical classes pertaining to the paper. Therefore, the topics given below are only for 10 marks each paper.

*Answer **any one** Question from each paper. (i.e., either 1 or 2) Each Question carries 10 Marks.*

Paper I: Analytical Chemistry

- Explain theory of Indicators with suitable examples.
 - Briefly explain acid-base concept in non-aqueous media.
- Discuss the principles involved in gravimetric analysis.
 - With a neat diagram describe the working principle of FID (Flame Ionisation Detector) and thermal conducting detector in gas chromatography.

Paper II: Inorganic Chemistry

- Give the preparation, structure and applications of silicone polymers.
 - Describe the preparation and structure of tetrasulphur tetranitride.
- Briefly discuss above various defects in crystal structure.
 - What are Interhalogen compounds? Explain the properties and structure of cyanogen & thiocyanogen.

Paper III: Organic Chemistry

- What is optical isomerism? Describe the optical isomerism exhibited by lactic acid and geometrical isomerism exhibited by 1,2-dichloroethene.
 - Explain the formation, stability, structure and reaction of carbanion.
- Describe the stereochemistry and mechanism of SN^2 reaction with suitable examples.
 - Discuss the aromaticity of cyclopentadienyl anion and cyclopropenyl cation.

Paper IV: Physical Chemistry

- State and explain the laws of thermodynamics.
 - Explain the mechanism of kinetics of enzyme catalysed reaction.
- Describe construction, working and application of fuelcell.
 - Explain nuclear fission and fusion reactions with examples.