

GANDHI P.R. COLLEGE, BHOPAL

Assignment-2020-21

M.Sc.-III SEM

Chemistry

**Application of Spectroscopy-I**

Paper-I

- Q.1 Describe selection rules for electronic transitions.
- Q.2 What are ambidentate ligands? Discuss their mode of bonding.
- Q.3 Discuss the vibrations and symmetry of polyatomic molecular.
- Q.4 Discuss shielding and deshielding effects in Nuclear magnetic resonance (NMR) spectroscopy.
- Q.5 Discuss the instrumentation and applications of Mossbauer spectroscopy.

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**Photo Chemistry**

Paper-II

- Q.1 Discuss the various parameters related with electromagnetic radiation?
- Q.2 Describe the effect of light intensity on the rate of photo-chemical reactions.
- Q.3 Discuss in brief the various types of photochemical reactions.
- Q.4 Discuss intermolecular cycloaddition reactions of carbonyl compounds.
- Q5 What is singlet molecular oxygen? Describe its reactions.

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**ENVIRONMENTAL CHEMISTRY**

Paper-III

- Q.1 what are Bio-geochemical cycles?
- Q.2 What are primary air pollutants? Describe their sources also.
- Q.3 What do you understand by primary, secondary and tertiary treatment of water? Explain categorically in detail.
- Q.4 Give a detailed account of polychlorinated biphenyls.
- Q5 Write an essay on re-mediation of soil.

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**POLYMERS**

Paper-IV(b)

- Q.1 बहुलकों के गुणों के आधार पर वर्गीकरण दीजिये ।  
Give classification of Polymers on the basis of their properties.
- Q.2 बहुलकों की तन्धता का वर्णन कीजिये ।  
Describe tensile strength of polymers.
- Q.3 विषमांगी एवं समांगी तंत्र में बहुलीकरण समझाइये ।  
Discuss polymerisation in Homogenous and Heterogeneous system.
- Q.4 बहुलकों में अणुभार वितरण के संदर्भ में पॉलीडिस्परसिटी का वर्णन कीजिये ।  
Discuss polydispersity for molecular weight distribution of polymer.
- Q.5 विभिन्न धातु संकुल एवं धातु कीलेट बहुलकों का वर्णन कीजिये ।  
Describe various metal complexes and metal chelates as polymers.

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**Organotransition Metal Complex**

Paper-IV(a)

- Q.1 Write nucleophilic reactions and nature of Bond of Carbynes.
- Q.2 Explain metal exchange reactions in allyl complexes.
- Q.3 Explain chemistry of complete of Boron.
- Q.4 Define hydrocarbonylation of olefins.
- Q.5 Discuss Fluxionality with suitable example.