



TAMIL NADU OPEN UNIVERSITY

Chennai - 15

School of Sciences
Department of Chemistry

HOME ASSIGNMENT

Programme Code No : 1182

Programme Name : B.Sc. Chemistry - 3rd Year [Semester 5]

Course Code & Name : BCHES - 51 & Inorganic Chemistry -I

Batch : **AY 2021-22**

No. of Assignments : 4 [One Assignment for each 2 credits]

Maximum CIA Marks : 30 [Average of total no. of Assignments]

ASSIGNMENT-1

Max: 30 Marks

Answer any ONE of the following three questions in 1500 words

- 1) Explain the following with suitable examples.
 - (i) Isotopes
 - (ii) Isobars
 - (iii) Isotones
 - (iv) Isomers
- 2) Describe about the solvents and its classifications with suitable examples.
- 3) Write notes on the following
 - (i) VB Theory
 - (ii) EAN rule



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Programme Name : B.Sc. Chemistry - 3rd Year [Semester 5]

Course Code & Name : BCHES - 51 & Inorganic Chemistry-I

Batch : AY 2021-22

No. of Assignments : 2 [One Assignment for each 2 credits]

Maximum CIA Marks : 30 [Average of total no. of Assignments]

ASSIGNMENT-2

Max: 30 Marks

Answer any ONE of the following three questions in 1500 words

- 1) Explain about the classification of solids with examples.
- 2) Discuss in detail about the terms involved in coordination chemistry.
- 3) Explain about the preparation, physical, chemical properties and uses of
 - (i) organomagnesium
 - (ii) organolithium
 - (iii) organoboron



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Programme Code No : 1182

Programme Name : B.Sc. Chemistry - 3rd Year [Semester -5]

Course Code & Name : BCHES - 52 & Organic Chemistry - I

Batch : **AY 2021-22**

No. of Assignments : 2 [One Assignment for each 2 credits]

Maximum CIA Marks : 30 [Average of total no. of Assignments]

ASSIGNMENT-1

Max: 30 Marks

Answer any ONE of the following three questions in 1500 words

- 1) Discuss in detail about the Chemistry of Furan, Pyrrole, Thiophene, Pyridine, Indole and Quinoline.
- 2) Discuss the following in NMR spectroscopy.
 - (i) factors affecting chemical shift, number of peaks in the NMR spectra
 - (ii) equivalent and non-equivalent protons
 - (iii) peak area and proton counting
 - (iv) splitting of signals
- 3) Discuss in detail about the optical activity of the following
 - (i) Biphenyls
 - (ii) Allenes
 - (iii) Spiranes



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Programme Name : B.Sc. Chemistry - 3rd Year [Semester -5]

Course Code & Name : BCHES - 52 & Organic Chemistry - I

Batch : **AY 2021-22**

No. of Assignments : 2 [One Assignment for each 2 credits]

Maximum CIA Marks : 30 [Average of total no. of Assignments]

ASSIGNMENT-2

Max: 30 Marks

Answer any ONE of the following three questions in 1000 words

- 1) Discuss in details about the Introduction, principle and terms involved in IR and NMR Spectroscopy.
- 2) Discuss in detail about the terms involved in the chirality.
- 3) Describe the following rearrangements with examples.
 - (i) Wagner-Meerwein
 - (ii) Claisen
 - (iii) Lossen
 - (iv) Schmidt
 - (v) Pinacol-Pinacolone



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Programme Code No : 1182

Programme Name : B.Sc. Chemistry - 3rd Year [Semester 5]

Course Code & Name : BCHES - 53 & Physical Chemistry-I

Batch : AY 2021-22

No. of Assignments : 2 [One Assignment for each 2 credits]

Maximum CIA Marks : 30 [Average of total no. of Assignments]

ASSIGNMENT-1

Max: 30 Marks

Answer any ONE of the following three questions in 1500 words

- 1) Discuss in detail about different type of thermodynamic process.
- 2) Discuss briefly about the following
 - (i) Zeroth Law of Thermodynamics
 - (ii) Heat and work
 - (iii) First law of Thermodynamics
 - (iv) Internal energy and Enthalpy
 - (v) Joule's Law and Joule-Thompson effect
- 3) Explain about the following
 - (i) Second law of thermodynamics
 - (ii) Carnot Cycle, Principle, theorem and efficiency
 - (iii) Gibbs-Helmholtz equation
 - (iv) Third Law of Thermodynamics and its applications
 - (v) Nernst heat theorem



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Batch : AY 2021-22

No. of Assignments : 2 [One Assignment for each 2 credits]

Maximum CIA Marks : 30 [Average of total no. of Assignments]

ASSIGNMENT-2

Max: 30 Marks

Answer any ONE of the following three questions in 1500 words

- 1) Discuss in details about
 - (i) Colligative properties
 - (ii) Raoult's Law and Henry's Law
 - (iii) Nernst distribution law and its applications

- 2) Explain about the following
 - (i) Standard electrode potential
 - (ii) Nernst equation
 - (iii) Electrochemical cells and types of cells

- 3) Discuss about the following.
 - (i) Molecular Spectra
 - (ii) Rotational Spectra of diatomic molecules
 - (iii) selection rule



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Programme Code No : 1182

Programme Name : B.Sc. Chemistry -3rd Year [Semester 5]

Course Code & Name : BCHES - 54 Polymer Chemistry

Batch : AY 2021-22

No. of Assignments : 4 [One Assignment for each 2 credits]

Maximum CIA Marks : 30 [Average of total no. of Assignments]

ASSIGNMENT-1

Max: 30 Marks

Answer any ONE of the following three questions in 1500 words

- 1) Discuss in details about Polymerization, mechanism of polymerization and classification of polymers with examples.
- 2) Explain in details about Average molecular weight of polymers
- 3) Discuss the following
 - (i) Polymerization Techniques
 - (ii) Morphology of crystalline polymers
 - (iii) Glass transition temperature



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Programme Name : B.Sc. Chemistry -3rd Year [Semester 5]

Course Code & Name : BCHES - 54 Polymer Chemistry

Batch : AY 2021-22

No. of Assignments : 4 [One Assignment for each 2 credits]

Maximum CIA Marks : 30 [Average of total no. of Assignments]

ASSIGNMENT-2

Max: 30 Marks

Answer any ONE of the following three questions in 1500 words

- 1) Discuss in details about different types of analysis of polymers
- 2) Explain in details about stereoisomerism disubstituted alkenes
- 3) Discuss the preparation, properties and usage of commercial polymers viz.
Polyethylene, Polyvinyl chloride, Polyamides, Polyesters, Phenolic resins, Epoxy resins
and Silicone polymers
