



# TAMIL NADU OPEN UNIVERSITY

Chennai - 15

School of Sciences

Department of Chemistry

## HOME ASSIGNMENT

Programme Code No : 182

Programme Name : B.Sc. Chemistry

Course Code & Name : BCHE - 21 & General Chemistry - III

Batches : AY 2020-21 [2<sup>nd</sup> Year]

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

Maximum CIA Marks : 15 Marks [Average of total no. of Assignments]

### ASSIGNMENT-1

Max: 15 Marks

Answer ANY ONE of the question not exceeding 1000 words

1) Discuss the following reactions with mechanisms

- (i) Riemer-Tiemann
- (ii) Vilsmeier Haack
- (iii) Chichibabin
- (iv) Gattermann-Koch

2) Explain about the following with examples.

- (i) Allotropes of carbon
- (ii) Charcoal and Silicon
- (iii) Compounds of Boron
- (iv) Uses of  $AlCl_3$

3) Write in details about the Collision Theory and Absolute Reaction Rate Theory.

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### ASSIGNMENT-2

Max: 15 Marks

Answer ANY ONE of the question not exceeding 1000 words

1) Write notes on the following compounds

- (i) Classification of Terpenes and Terpenoids

- (ii) Piperine
  - (iii) Nicotine
  - (iv) Conine
- 2) Discuss in details about the determination of rate and order of a reaction.
- 3) Explain about the following with examples.
- (i) Ortho and Para directing groups
  - (ii) Substitution reactions and its classifications

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### **ASSIGNMENT-3**

**Max: 15 Marks**

**Answer ANY ONE of the question not exceeding 1000 words**

- 1) Discuss about the following with examples
- (i) Order and Molecularity of a reaction
  - (ii) Glasses and Ceramics
  - (iii) Organometallic compounds of Li
- 2) Describe the following with examples.
- (i) Allotropes of carbon
  - (ii) Uses of Boron nitride
  - (iii) Compounds of Aluminium
  - (iv) Compounds of Boron
- 3) Explain about the Characteristic features of Terpenoids and Alkaloids.

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### **ASSIGNMENT-4**

**Max: 15 Marks**

**Answer ANY ONE of the question not exceeding 1000 words**

- 1) Explain about the following reactions with examples
- (i) Chichibabin
  - (ii) Vilsmeier Haack
  - (iii) Reimer-Tiemann
  - (iv) Friedel Craft' alkylation and arylation
- 2) Discuss about the chemistry of charcoal and silicon.
- 3) Describe the following
- (i) Classification of Terpenes and Terpenoids

- (ii) Menthol)
- (iii) Citral
- (iv) Camphor

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### HOME ASSIGNMENT

Programme Code No : 182  
Programme Name : B.Sc. Chemistry  
Course Code & Name : BCHE - 22 & General Chemistry - IV  
Batch : **AY 2020-21 [2<sup>nd</sup> Year]**  
No. of Assignments : 4 [One Assignment for each 2 credits]  
Maximum CIA Marks : 15 [Average of total no. of Assignments]

### ASSIGNMENT-1

Max: 15 Marks

Answer ANY ONE of the question not exceeding 1000 words

- 1) Discuss in details about the characteristic features of Oxygen and Nitrogen family elements.
- 2) Explain about the following
  - (i) Principles of metallurgy
  - (ii) Metallurgical operations and processes
  - (iii) Methods involved in the extraction of metals
- 3) Describe the following with examples.
  - (i) Solvent-free reaction
  - (ii) Phase-transfer catalysts
  - (iii) Biocatalysts
  - (iv) Microwave assisted synthesis
  - (v) Ultrasound assisted synthesis

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## **ASSIGNMENT-2**

Max: 15 Marks

**Answer ANY ONE of the question not exceeding 1000 words**

- 1) Write notes on the important compounds and uses of Cr, Mn and Ni.
- 2) Explain about the chemistry of the following compounds
  - (i)  $\text{XeF}_2$
  - (ii)  $\text{XeF}_4$
  - (iii)  $\text{XeF}_6$
  - (iv)  $\text{XeOF}_2$
  - (v)  $\text{XeOF}_4$
- 3) Discuss about the following with examples.
  - (i) Classification of Carbohydrates
  - (ii) Classification of Vitamins
  - (iii) Hormones

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## **ASSIGNMENT-3**

Max: 15 Marks

**Answer ANY ONE of the question not exceeding 1000 words**

- 1) Explain about the chemistry of the following compounds.
  - (i)  $\text{PCl}_3$
  - (ii)  $\text{PCl}_5$
  - (iii)  $\text{POCl}_3$
  - (iv)  $\text{PH}_3$
  - (v)  $\text{P}_2\text{O}_5$
- 2) Describe about the following drugs with examples.
  - (i) Antibiotic
  - (ii) Antipyretic
  - (iii) Anti-inflammatory
  - (iv) Analgesic
  - (v) Anaesthetic
- 3) Discuss in details about the important compounds and uses of Co, Ni and Zn.

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## **ASSIGNMENT-4**

Max: 15 Marks

**Answer ANY ONE of the question not exceeding 1000 words**

- 1) Explain in details about the extraction processes of metals.
- 2) Describe the following with examples.
  - (i) Anomalous behaviour of Oxygen
  - (ii) Pseudohalogens
  - (iii) Inert gases
  - (iv) Uses of Nitrogen
- 3) Discuss in details about the following.
  - (i) Lanthanide contraction
  - (ii) Toxicity of Cadmium and Mercury
  - (iii) Comparative accounts of Lanthanides and Actinides

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### **HOME ASSIGNMENT**

Programme Code No : 182

Programme Name : B.Sc. Chemistry

Course Code & Name : BCHEA - 02 & Animal Diversity (Ancillary paper)

Batch : **AY 2020-21 [2<sup>nd</sup> Year]**

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

Maximum CIA Marks : 25 [Average of total no. of Assignments]

## **ASSIGNMENT-1**

Max: 25 Marks

**Answer any ONE of the following three questions in 1000 words**

- 1) Discuss in detail about the diversity of Chordates.
- 2) Explain the life cycle of Lamellidens.
- 3) Detail account on external features of Pigeon.

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**ASSIGNMENT-2**

Max: 25 Marks

**Answer any ONE of the following three questions in 1000 words**

- 1) Discuss the general characteristics, classification and distributions of Shark.
- 2) Explain the general characteristics, classification and distributions of Rabbit.
- 3) Explain the general characteristic and classification of Frog.