

## **COURSE-V BSCCH 201 INORGANIC CHEMISTRY- II**

### **Block 1 d- block elements**

#### **Unit-1 Chemistry of elements of first transition series**

- 1.1 Objectives
- 1.2 Introduction
- 1.3 Characteristic properties of d-block elements.
- 1.4 Properties of the first transition series,
- 1.5 Their binary compounds and complexes
- 1.6 Illustrating relative stability of their oxidation state,
- 1.7 Coordination number and geometry
- 1.8 Summary
- 1.9 Terminal Question
- 1.10 Answers

#### **Unit-2 Chemistry of element of second transition series**

- 2.1 Objectives
- 2.2 Introduction
- 2.3 General characteristics
- 2.4 Comparative study with their 3d-analogues in respect to-  
Ionic radii, oxidation state, magnetic behavior
- 2.5 Spectral properties and stereochemistry
- 2.6 Summary
- 2.7 Terminal Question
- 2.8 Answers

#### **Unit-3 Chemistry of element of third transition series**

- 3.1 Objectives
- 3.2 Introduction
- 3.3 General characteristics
- 3.4 Comparative study with their 3d-analogues in respect to
- 3.5 Ionic radii, oxidation state, magnetic behavior
- 3.6 Spectral properties and stereochemistry
- 3.7 Summary

3.8 Terminal Question

3.9 Answers

## **Block 2 f- block elements**

### **Unit-4 Chemistry of Lanthanide elements**

4.1 Introduction

4.2 Objectives

4.3 Electronic structure

4.4 Oxidation state and ionic radii

4.5 Lanthanide contraction

4.6 Complex formation

4.7 Occurrence and isolation,

4.8 Lanthanide compounds

4.9 Summary

4.10 Terminal Question

4.11 Answers

### **Unit-5 Chemistry of Actinides elements**

5.1 Objectives

5.2 Introduction

5.3 General feature

5.4 Chemistry of actinides

5.5 Chemistry of separation of Np, Pu and Am from U

5.6 Similarities between the latter actinides and the latter lanthanides

5.7 Summary

5.8 Terminal Question

5.9 Answers

## **Block 4 Co-ordination Chemistry and redox reactions**

### **Unit-6 Co-ordination Compounds**

6.1 Objectives

6.2 Introduction

6.3 Werner's coordination theory and its experimental verification

6.4 Effective atomic number concept

6.5 Chelates

6.6 Nomenclature of coordination compounds

6.7 Summary

6.8 Terminal Question

6.9 Answers

### **Unit-7 Isomerism of Co-ordination Compounds**

7.1 Objectives

7.2 Introduction

7.3 Isomerism in coordination compounds

7.4 Valence bond theory of transition metal complex

7.5 Summary

7.6 Terminal Question

7.7 Answers

### **Unit-8 Oxidation and Reduction**

8.1 Objectives

8.2 Introduction

8.3 Use of redox potential data

8.4 Analysis of redox cycles

8.5 Redox stability in water-Frost

8.6 Latimer and Pourbaix

8.7 Principles involved in the extraction of the element

8.8 Summary

8.9 Terminal Question

8.10 Answers

### **Block 4 Concepts of acids and bases**

#### **Unit-9 Acids and Bases**

9.1 Objectives

9.2 Introduction

9.3 General concept of acid and base

9.4 Theory of acid and base

9.5 Arrhenius

9.6 Bronsted- Lory

9.7 Lux-Flood

9.8 Solvent system

9.9 Lewis concept of acids and base

9.10 Summary

9.11 Terminal Question

9.12 Answers