

Faculty of Science
B. Sc (Chemistry) I-Year, CBCS –II Semester
Regular Examinations –June/July, 2022
PAPER: Chemistry-II

Time: 3 Hours

Max Marks: 80

Section-A

- I. Answer any *eight* of the following (8x4=32 Marks)
1. What are "Pseudo halogens"? Explain them?
 2. Write the structures, shape & hybridization of Xenon Oxides
 3. Catalytic property of d-Block elements
 4. Explain the synthesis of alcohols from Grignard reagents and carbonyl compounds
 5. Explain Williamsons synthesis with examples
 6. Explain Cannizaro reaction with mechanism
 7. Explain the effect of dilution on equivalent conductance and molar conductance
 8. Explain Arrhenius theory of electrolyte dissociation and its limitations
 9. Write about Nernst equation, cell EMF
 10. Explain the Ostwalds theory of Acid-Base indicators in neutralization titrations.
 11. Explain Asymmetric and Dissymmetric molecules
 12. Define osmotic pressure and write the laws of osmotic pressure

Section-B

- II. Answer the following questions (4x12=48 Marks)
13. (a) Write the structures of Oxides and oxy acids of Chlorine
(OR)
(b) Explain a) Variable oxidation states b) Magnetic property c) color property of d-Block elements
 14. (a) Explain SN^1 and SN^2 reaction with mechanism
(OR)
(b) Explain Reimer-Tiemann reaction and Kolbe reaction with mechanism
 15. (a) i) State, explain and give applications of "Kohlrausch law
ii) Explain the construction and working of calomel electrode
(OR)
(b) Define transport number and its determination by Hittorf method
 16. (a) Explain Plane of symmetry (σ), Center of symmetry (i), and Axis of symmetry (C_n) with examples
(OR)
(b) Define elevation in boiling point and derive the relation between the molecular weight of solute and elevation in boiling point.

Faculty of Science

B.Sc (Chemistry) I-Year, CBCS –II Semester Backlog Examinations –Jan, 2023

PAPER: Chemistry-II

Time: 3 Hours

Max Marks: 80

Section-A

I. Answer any *eight* of the following questions (8x4=32 Marks)

1. Write about the structure of oxides of nitrogen
2. Write about the structure and hybridization of XeF₄
3. Write a note on chromium triad
4. Write the reactions of the following:-
(i) Esterification's (ii) Williamson's synthesis
5. Write about the acidic nature of phenol?
6. Give the mechanism of clemmenson's reduction.
7. Write a note on kholrausch's law
8. Define (i) EMF of a cell (ii) Nernst equation
9. Write about the calomel electrode.
10. Write a note on laws of Osmotic Pressure.
11. Define specific rotation and chiral molecules.
12. Write about the theory of redox titrations.

Section-B

II. Answer the following questions (4x12=48 Marks)

13. (a) What are d-block elements? Explain the following properties:-
(i) Variable valence (ii) Magnetic Properties
(OR)
(b) What are Interhalogen Compounds? Explain the structure and hybridization of Different types of interhalogen compounds.
14. (a) Explain SN¹ and SN² reactions with examples.
(OR)
(b) Write the reaction and reaction mechanism of the following:-
(i) Riemer-Tieman reaction (ii) Kolbe reaction
15. (a) What are transport numbers? Explain the determination of transport number by Hittorf methods.
(OR)
(b) Explain the Arrhenius theory of electrolyte dissociation and its limitations.
16. (a) Explain about the Co-precipitation and post-precipitation.
(OR)
(b) Derive the relation between molecular weight and elevation in boiling point.

Faculty of Science

B.Sc (Chemistry) I-Year, CBCS-II Semester Regular Examinations –June, 2023

PAPER: Chemistry-II

Time: 3 Hours

Max Marks: 80

Section-A

- I. Answer any *eight* of the following questions (8x4=32 Marks)
1. Explain the classification of Oxides based on the content of oxygen
 2. Write the structures, shape & hybridization of XeF₂, XeF₄, XeF₆
 3. What are poly halides? Explain the structure of ICl_2^- , ICl_4^-
 4. Why Aryl halides are less reactive & benzyl halides are more reactive
 5. Explain Kolbe reaction with mechanism
 6. Explain Clemenson's reduction & Wolf-Kishner reduction with examples
 7. State, explain and give applications of "Kohlrausch law
 8. Explain the construction and working of Hydrogen electrode.
 9. Explain Ostwald's dilution law.
 10. Explain Co-precipitation and Post-precipitation.
 11. Explain Plane of symmetry (σ), Center of symmetry (i),
 12. State and explain Raoult's law

Section-B

- II. Answer the following questions (4x12=48 Marks)
13. (a) Write the structures of Oxides and oxy acids of Sulphur
(OR)
(b) Explain a). Color property b). Catalytic property c) Magnetic property of d-Block elements
 14. (a) Explain SN² reaction with mechanism and stereochemistry by taking 2-Bromo butane
(OR)
(b) Explain Reimer-Tiemann reaction and Cannizaro reaction with mechanism
 15. (a) Define transport number and its determination by Hittorf method
(OR)
(b) Write and explain Debye-Huckel-Onsager equation.
 16. (a) Explain R,S-configuration using Cahn-Ingold-Prelog rules with examples.
(OR)
(b) Define osmotic pressure, the laws of osmotic pressure and derive the relation between the molecular weight of solute & osmotic pressure.
