

BOARD OF SECONDARY EDUCATION KARACHI.
KARACHI, HYDERABAD, SUKKAR, LARKANA, MIR PUR KHAS BOARD.

S.S.C(ANNUAL) EXAMINATIONS 2023

CHEMISTRY (THEORY) PAPER – II

Time: 3 Hours

CLASS - X (SCIENCE GROUP)

(Marks: 60)

SECTION "A" (20%)

MULTIPLE CHOICE QUESTIONS (MCQs)

(12 Marks)

SECTION "B" (40%)

(SHORT ANSWERS QUESTIONS)

(24 marks)

SECTION "C" (40%)

(DESCRIPTIVE ANSWER QUESTIONS)

(24 Marks)

CHAPTER NO. 1

CHEMICAL EQUILIBRIUM

SECTION "A" 20%

MULTIPLE CHOICE QUESTIONS. (MCQs): PAGE NO. 16 (S.T.B) 2, 3, 4, 6, 7, 8

SECTION "B" 40%

(SHORT ANSWERS QUESTIONS)

1. Define chemical equilibrium with example.
2. Why chemical equilibrium is dynamic?
3. Outline the characteristics of reversible reaction.
4. Distinguished between reversible and irreversible reaction.
5. State law of mass action. How the active mass is represented?
6. How direction of a reaction can be predicted if K_c is known to you

SECTION "C" 40%

(DESCRIPTIVE ANSWER QUESTIONS)

1. Describe dynamic equilibrium with two examples.
2. State law of mass action. Derive an expression for equilibrium constant.
3. Describe the characteristics of equilibrium constant.
4. PCl_5 , PCl_3 and Cl_2 are at equilibrium at 500 K in a closed container and their concentrations are $0.8 \times 10^{-3} \text{ mol dm}^{-3}$, $1.2 \times 10^{-3} \text{ mol dm}^{-3}$ and $1.2 \times 10^{-3} \text{ mol dm}^{-3}$ respectively. Calculate the value of K_c for the reaction along with unit.

CHAPTER NO. 2

ACID, BASE AND SALT.

SECTION "A" 20%

MULTIPLE CHOICE QUESTIONS. (MCQs): PAGE NO. 31 2, 3, 4, 5, 6, 7, 9, 10

SECTION "B" 40%

(SHORT ANSWERS QUESTIONS)

1. Discuss the properties of acid and base.
2. Elaborate the Arrhenius concept of acid and base with suitable example.
3. What is Bronsted-Lowry acid-base theory?
4. What are conjugate acid base pairs? Explain with examples.
5. Define the following: a. pH b. Indicator c. Neutralization d. Titration
6. Why Arrhenius theory is only applicable on aqueous solutions?

SECTION "C" 40%

(DESCRIPTIVE ANSWER QUESTIONS)

1. Describe Salts, preparation of salts and types of salts.
2. What do you mean by balancing of neutralization reaction with the help of example?
3. Write down the uses of salt in daily life.
4. Calculate pH of 5 M solution of NaOH
5. The hydrogen ion concentration of a solution is $1 \times 10^{-4} \text{ mol. dm}^{-3}$. What is pH of the solution?

CHAPTER NO. 3 ORGANIC CHEMISTRY

SECTION "A" 20%

MULTIPLE CHOICE QUESTIONS. (MCQs): PAGE NO. 54 - ii, iii, iv, vi, vii, viii, x

SECTION "B" 40%

(SHORT ANSWERS QUESTIONS)

1. Explain how petroleum is source of organic compounds?
2. Define the functional group. Write the functional groups which contain carbon hydrogen and oxygen.
3. What is homologous series? Name the some common homologous series.
4. Write the condensed and structural formulae of the pentane and octane.
5. What is catenation? Give any two examples of catenation of carbon atom.
6. What is Rae of Reactivity of organic compounds?

SECTION "C " 40%

(DESCRIPTIVE ANSWER QUESTIONS).

1. Difference between Saturated and Unsaturated hydrocarbons.
2. Give the important characteristics of organic compounds.
3. Describe the used of organic compound.
4. Define nomenclature and describe the I.U.P.A.C nomenclature rules for alkynes.

CHAPTER NO. 4 BIOCHEMISTRY

SECTION "A" 20%

MULTIPLE CHOICE QUESTIONS. (MCQs): PAGE NO. 71- i, ii, iv, v, vi, vii, ix, x

SECTION "B" 40%

(SHORT ANSWERS QUESTIONS).

1. Difference between fats and oils.
2. What are the polysaccharides? How monosaccharides are produced from polysaccharides?
3. What are the amino acids and give their general structure?
4. What is vitamin D? Give its sources and importance.
5. Distinguish between fat soluble and water soluble vitamins.
6. Difference between monosacchrides and oligosaccharides?

SECTION "C " 40%

(DESCRIPTIVE ANSWER QUESTIONS)

1. What are the carbohydrates? Explain sources and used of carbohydrates.
2. What are lipids? Write down the sources and used of lipids.
3. Describe vitamins and types of vitamins.
4. Describe in detail nucleic acid. RNA and DNA.

CHAPTER NO. 5 ENVIRONMENTAL CHMISTRY-1 THE ATMOSPHERE.

SECTION "A" 20%

MULTIPLE CHOICE QUESTIONS. (MCQs): PAGE NO. 86- 1, 3, 4, 5, 8, 9, 10

SECTION "B" 40%

(SHORT ANSWERS QUESTIONS).

1. Enlist major air pollutants and their sources.
2. Describe the effects of some air pollutants on human health?
3. What is the cause of acid rain?
4. List down the layers of atmosphere.
5. Write down the effects of acid rain.
6. What are primary and secondary air pollutants?
7. Difference between stratosphere and troposphere?

SECTION "C " 40%

(DESCRIPTIVE ANSWER QUESTIONS).

1. Define atmosphere and explain composition.
2. Differentiate between Stratosphere and Troposphere
3. Describe Global Warming.

CHAPTER NO. 6 ENVIRONMENTAL CHEMISTRY II: WATER.

SECTION "A" 20%

MULTIPLE CHOICE QUESTIONS. (MCOs): PAGE NO. 102- 1, 2, 3, 4, 5, 7, 9

SECTION "B" 40%

(SHORT ANSWERS QUESTIONS).

1. Define hard and soft water.
2. Describe water pollutant.
3. How we can remove temporary hardness of water?
4. Difference between hard and soft water.
5. Write four points of importance of water.
6. Write types of water.
7. Clarks's method removal water.

SECTION "C " 40%

(DESCRIPTIVE ANSWER QUESTIONS)

1. Write down the methods for removal of permanent hardness of water.
2. Describe the water pollutants in industries.
3. Describe disadvantages of hard water?
4. Explain in detail Water borne diseases.

CHAPTER NO. 7 ANALYTICAL CHEMISTRY.

SECTION "A" 20%

MULTIPLE CHOICE QUESTIONS. (MCOs): PAGE NO. 120- 3, 4, 5, 7, 9, 10

SECTION "B" 40%

(SHORT ANSWERS QUESTIONS).

1. Difference between quantitative and qualitative analysis?
2. Distinguish between accuracy and precision?
3. What is Indicator?
4. Difference between mobile phase and stationary phase?
5. What are volatile compounds?
6. Distinguish between Classical and Instrumental Methods.

SECTION "C " 40%

(DESCRIPTIVE ANSWER QUESTIONS).

1. Distinguish between following:
 - a. Quantitative analysis and Qualitative analysis.
 - b. Titrimetric analysis and Gravimetric Analysis.
2. Describe Gas Chromatography in detail?
3. Justify that electrochemical methods depend upon Electrochemical Cells?

CHAPTER NO. 8 INDUSTRIAL CHEMISTRY

SECTION "A" 20%

MULTIPLE CHOICE QUESTIONS. (MCOs): PAGE NO. 134- 3, 4, 5, 6, 7, 9, 10

SECTION "B" 40%

(SHORT ANSWERS QUESTIONS).

1. Define fractional distillation.
2. Define saponification process.
3. Describe that NaOH or KOH are used in preparation of soap.
4. List down the raw material needed for sugar preparation.
5. Explain components of soft drinks.
6. Define petroleum.

SECTION "C " 40%

(DESCRIPTIVE ANSWER QUESTIONS).

1. Describe fractions of petroleum in detail.
2. Explain the process of preparation of sugar from sugar cane.
3. Draw stepwise preparation of soft drinks in flow sheet diagram.