ICSE Board
Class VI Chemistry
Sample Paper – 3

Time: 2 hrs **Total Marks: 75**

General Instructions:

1. ***All*** *questions are* ***compulsory****.*
2. *Questions 1 to 15 carry one mark each.*
3. *Questions in 2 A and B carry one mark each.*
4. *Questions in 3 A carry one mark each and Question 3 B carries five marks.*
5. *Questions 4 A and B carry five marks each.*
6. *Questions in 5 A and B carry one mark each.*
7. *Questions in 6 A and B carry one mark each.*
8. *Question 7 carries ten marks.*

Question 1

Choose the correct answer out of the four available choices given under each question. [15]

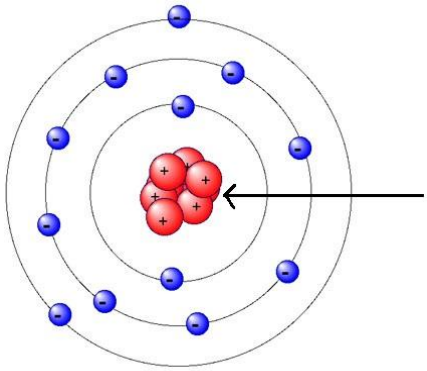
1. Organic chemistry is the study of _____ compounds.
(a) Oxygen
(b) Sulphur
(c) Carbon
(d) Nitrogen

2. Who discovered the modern periodic table?
(a) Henry Cavendish
(b) Car Scheele
(c) Van Helmont
(d) Moseley

3. Which of the following is the property of gas?
(a) Definite volume, no definite shape, highly compressible, least rigid
(b) No definite volume, no definite shape, highly compressible, least rigid
(c) Definite volume, definite shape, highly compressible, least rigid
(d) Definite volume, no definite shape, highly compressible, highly rigid

4. The process of conversion of a gas into a liquid is called_____.
(a) Melting
(b) Vaporisation
(c) Condensation
(d) Freezing

5. The following diagram shows the structure of an atom. The marked part consists of _____.



(a) Electrons and neutrons
(b) Protons and neutrons
(c) Protons and electrons
(d) Protons

6. _____ is the representation of a substance by symbols.
(a) Chemical formula
(b) Chemical structure
(c) Chemical equation
(d) Chemical reaction

7. Which method is based on the difference in weights of the solid particles?
(a) Sieving
(b) Winnowing
(c) Filtration
(d) Handpicking

8. Kerosene can be separated from water using a _____.
(a) Separating funnel
(b) Filter paper
(c) Sieve
(d) Centrifuge

9. The gas whose percentage is maximum in air is
(a) Oxygen
(b) Nitrogen
(c) Carbob dioxide
(d) Water vapours

10. In solution molecules of the dissolved solid are
(a) Solute
(b) Solvent
(c) Filtrate
(d) Sediment

11. What is the percentage of nitrogen in air?
(a) 0.02–0.03
(b) 21%
(c) 78–79%
(d) Variable

12. Which gas is taken in during photosynthesis?
(a) Oxygen
(b) Carbon dioxide
(c) Sulphur dioxide
(d) Nitrogen dioxide

13. The density of water is maximum at
(a) 0^0C
(b) 4^0C
(c) 100^0C
(d) 25^0C

14. _____ is used to obtain the purest form of water.
(a) Filtration
(b) Boiling
(c) Condensation
(d) Distillation

15. The product of photosynthesis is
(a) Nitrogen
(b) Hydrogen
(c) Carbon dioxide
(d) Oxygen

Question 2

(A) Give a scientific word for the following: [5]

1. A subject which deals with the different forms of energy.
2. Elements which show the property of metals and non-metals.
3. A method of separation based on the difference in the solubility of solid in a liquid.
4. The process by which plants make their food
5. A solution which cannot dissolve more of a solute at a given temperature.

(B) Fill in the blanks and rewrite the sentences: [5]

1. Sedimentation is followed by _____.
2. Matter has _____ and occupies_____.
3. _____ is used in observation balloons.
4. Chemical formula for calcium chloride is _____.
5. A _____ is a calibrated glass tube with openings at both the ends.

Question 3

(A) Match the item in Column A with the appropriate item in Column B. [5]

Column A	Column B
1. Killing germs	a) Distillation
2. Obtaining pure water	b) Periodic table
3. Mendeleev	c) Chlorine
4. Luster	d) Radioactivity
5. Marie Curie	e) Metals

(B) Study the diagram below and answer the questions which follow: [5]

1. Which method of separation of mixtures is shown in the figure above?
2. What particles are numbered 1 and what particles are numbered 2?

Question 4

(A) State a method to separate the following mixtures: [5]

1. Separating stone particles from wheat grains
2. Separating heterogeneous solid–liquid mixtures
3. Separating saw dust from water
4. Separating liquid–liquid immiscible mixtures
5. Separating RBCs from blood

(B) Define the following: [5]

1. Element
2. Condensation
3. Heterogeneous mixture
4. Boiling point
5. Vaporisation

Question 5

(A) Give the chemical formulae for the following: [5]

1. Potassium hydroxide
2. Calcium chloride
3. Aluminium hydroxide
4. Sodium chloride
5. Sulphuric acid

(B) Give one example of the following: [5]

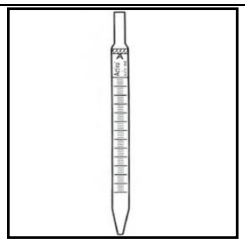
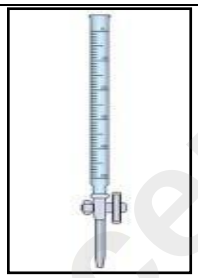
1. Liquid-liquid mixture
2. Major branches of science
3. Separation by centrifugation
4. Mixture of solid in liquid
5. Separation by filtration

Question 6

(A) State whether True or False: [5]

1. Metallic elements are non-ductile.
2. Solidification is the same as condensation.
3. In zinc oxide, the valency of zinc is two.
4. During sublimation, solid changes into liquid.
5. Distillation is a process of separating a heterogeneous liquid–liquid mixture.

(B) Name the following apparatus used in a chemistry laboratory. [5]

Apparatus	Name
	
	
	
	
	

Question 7

1. Distinguish between solids, liquids and gases. [4]
2. Distinguish between element, compound and mixture. [3]
3. Distinguish between metals and non-metals. [3]

Solution

Question 1

1. **(c)** Carbon
   Organic chemistry is the study of carbon compounds.

2. **(d)** Moseley
   Moseley discovered the modern periodic table.

3. **(a)** Definite volume, no definite shape, highly compressible, least rigid
   Gas has definite volume, but no definite shape. It is highly compressible and least rigid.

4. **(b)** Condensation
   The conversion of a gas into liquid is called condensation.

5. **(b)** Protons and neutrons
   Nucleus of an atom consists of neutrons and protons.

6. **(a)** Chemical formula
   Chemical formula is the representation of a substance by symbols.

7. **(b)** Winnowing
   Winnowing method is based on the difference in weights of the solid particles.

8. **(a)** Separating funnel
   Organic compound such as kerosene can be separated from water using a separating funnel.

9. **(b)** Nitrogen
   The gas whose percentage is maximum in air is nitrogen

10. **(a)** Solute
    In solution molecules of the dissolved solid are solute.

11. **(c)** 78–79%
    The percentage of nitrogen in air is 78-79%.

12. **(b)** Carbon dioxide
    Carbon dioxide gas is taken in during photosynthesis.

13. (a) 4^0C

The density of water is maximum at 4^0C

14. (d) Distillation

Distillation is used to obtain the purest form of water.

15. (d) Oxygen

The product of photosynthesis is oxygen

Question 2

(A)

1. Physics
2. Metalloids
3. Crystallisation
4. Photosynthesis
5. Saturated solution

(B)

1. Sedimentation is followed by decantation.
2. Matter has mass and occupies space.
3. Helium is used in observation balloons.
4. Chemical formula for calcium chloride is $CaCl_2$
5. A pipette is a calibrated glass tube with openings at both the ends.

Question 3

(A)

Column A	Column B
1. Killing germs	a) Chlorine
2. Obtaining pure water	b) Distillation
3. Mendeleev	c) Periodic table
4. Luster	d) Metals
5. Marie Curie	e) Radioactivity

(B)

1. The figure shows sublimation. It is a process of separation of mixtures based on the difference between the sublimable and non-sublimable nature of solids.
2. The particles numbered 1 are sublimable solids, and the particles numbered 2 are non-sublimable solids.

Question 4

(A)

1. Handpicking
2. Decantation
3. Filtration
4. Separating funnel
5. Centrifugation

(B)

1. Element: An element is a pure substance and is made of one kind of atoms. Examples: Sulphur, Hydrogen, Oxygen
2. Condensation: The process in which a gas is converted into the liquid form is called condensation.
3. Heterogeneous mixture: A mixture in which the components or constituents are not uniformly distributed throughout its volume is called a heterogeneous mixture.
4. Boiling point: The boiling point is the temperature at which a liquid starts boiling. The boiling point of water is 100°C.
5. Vaporisation: The process in which a liquid is converted into the gaseous form is called vaporisation.

Question 5

(A)

1. Potassium hydroxide: KOH
2. Calcium chloride: $CaCl_2$
3. Aluminium hydroxide: $Al(OH)_3$
4. Sodium chloride: NaCl
5. Sulphuric acid: H_2SO_4

(B)

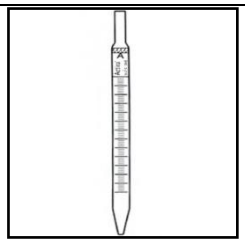
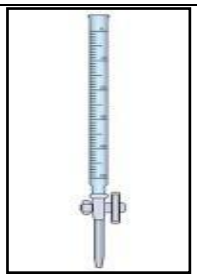
1. Liquid-liquid mixture : Lemon juice and water
2. Major branches of science: Physics, Chemistry and Biology
3. Separation by centrifugation: Cream from milk
4. Mixture of solid in liquid: Sea water
5. Separation by filtration: Separation of tea leaves from the liquid

Question 6

(A)

1. **False.** Metallic elements are ductile.
2. **False.** Solidification is not the same as condensation.
3. **True.**
4. **False.** During sublimation, solid changes into vapour.
5. **False.** Distillation is a process of separating a homogeneous liquid–liquid mixture.

(B)

Apparatus	Name
	Pipette
	Burette
	Test tubes
	Beaker
	Thistle funnel

Question 7

1.

Solids	Liquids	Gases
• Solids have definite shape and volume. • Solids cannot be compressed. • Solids are highly rigid. • Solids cannot diffuse. • The space between the atoms in a solid is minimum.	• Liquids have definite volume but no definite shape. • Liquids can be slightly compressed. • Liquids are less rigid. • Liquids show diffusion. • The space between the atoms is more than that of solids and less than that of gases.	• Gases have no definite shape or definite volume. • Gases can be highly compressed. • Gases are least rigid. • Gases can easily diffuse. • The space between the atoms in a gas is maximum.

2.

Element	Compound	Mixture
• An element is made of one kind of atoms. • It cannot be broken down into simpler substances by any physical or chemical method. • Elements have their own set of properties.	• A compound is made of two or more kinds of atoms. • It can be broken down into simpler substances by chemical methods. • The properties of a compound differ from those of their elements.	• A mixture is made of two or more elements or compounds. • It can be separated by physical methods. • Mixtures have no definite set of properties.

3.

Metals	Non-metals
• Metals have lustre. • Metals are malleable and can be beaten into sheets. • Metals are ductile and can be drawn into wires. • Metals are good conductors of heat and electricity.	• Non-metals do not have lustre. • Non-metals are non-malleable and cannot be beaten into sheets. • Non-metals are non-ductile and cannot be drawn into wires. • Non-metals are poor conductors of heat and electricity.