FIRST TERM EXAMINATION 2025
CLASS VII
SUBJECT – CHEMISTRY

Reading Time: 15 Minutes
Writing time: 2 Hour

Full Marks: 80

SECTION – A (Attempt all the questions)

Question 1

Choose the correct answer from the options given below: [15]

i. Atomic number represents the
   a. Number of ions in the formula
   b. Number of protons
   c. Number of electrons
   d. Number of neutrons

ii. Which of the following is not a characteristic of a chemical change
   a. Change of colour
   b. Change in smell
   c. Change in state
   d. Production of a gas

iii. Solar energy is converted to chemical energy during
   a. Photosynthesis
   b. respiration
   c. Fermentation
   d. sublimation

iv. The process in which heat energy is not absorbed.
   a. Melting
   b. Condensation
   c. Boiling
   d. Evaporation

v. The method of separating components of a given mixture are based on the
   a. State of the components only
   b. Physical properties of the components
   c. Colour of the components only
   d. Both (a.) & (b.)

vi. Read the statements below and identify which is incorrect.
   1. Symbol of aluminium is Al
   2. Symbol of mercury is Mg
   3. Symbol of gold is G
   4. Symbol of iron is I
   a. Only 2
   b. 2, 3, 4
   c. 1, 2
   d. 2, 4

vii. Liquid takes the shape of the containing vessel, this is because:
   a. The position of molecules does not change.
   b. The position of the molecules easily changes within the liquid.
   c. Intermolecular forces of attraction is very strong.
   d. Intermolecular space is very small.

viii. The substance left behind on the filter paper is known as?
   a. residue
   b. distillate
   c. filtrate
   d. sublime

ix. Name the main metal present in Haemoglobin:
   a. Calcium
   b. Iron
   b. Magnesium
   d. Aluminium

x. Mass is a measurement of:
   a. Amount of space an object occupies
   b. How dense an object is
   c. The amount of matter in an object.
   d. The volume of an object

xi. What is common among: 1. Swinging of pendulum of a clock, 2. Blinking of traffic lights & 3. Rotation of blades of a fan

a. All are chemical changes
b. All are physical changes
c. All are irreversible changes
d. All are permanent changes

xii. The mixture of iron and sulphur can be separated by using:

a. magnet
b. Carbon disulphide
c. either (a.) or (b.)
d. neither (a.) nor (b.)

xiii. **Assertion (A):** The number of electrons donated or accepted by an atom of an element so as to have 8 electrons in its outermost shell is called valency.

Reason (R): Valency of an element is equal to number of protons present in the nucleus.

a. Both (A) and (R) are true and the (R) is the correct explanation of (A).
b. Both (A) and (R) are true and the (R) is not the correct explanation of (A).
c. (A) is true but (R) is false.
d. (A) is false but (R) is true.

xiv. **Assertion (A):** Element and compounds are the examples of pure substances.

Reason (R): The properties of a compound are different from those of its constituent elements.

a. Both (A) and (R) are true and the (R) is the correct explanation of (A).
b. Both (A) and (R) are true and the (R) is not the correct explanation of (A).
c. (A) is true but (R) is false.
d. (A) is false but (R) is true.

xv. **Assertion (A):** The empty space between the molecules is called intermolecular space.

Reason (R): Atoms or molecules are not only very small, but are in state of continuous motion.

a. Both (A) and (R) are true and the (R) is the correct explanation of (A).
b. Both (A) and (R) are true and the (R) is not the correct explanation of (A).
c. (A) is true but (R) is false.
d. (A) is false but (R) is true.

Question 2

i) Fill in the blanks with the choices given in brackets: **[5]**

a. _____ energy is generally given out or absorbed during a chemical change.
b. Substance like ____ can be removed from a mixture by the process of sublimation.
c. _____ state of matter consists of electrically charged particles of gaseous matter.
d. Metals have electro _____ valency
e. By _____ elements we mean such elements which give harmful radiation.

ii) Rewrite the incorrect statement. **[5]**

a. The positively charged particle within the nucleus of an atom is called nucleon.
b. The components of mixture can be separated by chemical means.
c. The atomicity of a molecule of phosphorous is eight.
d. A physical change cannot be reversed.
e. The smallest intermolecular space is in case of liquids.

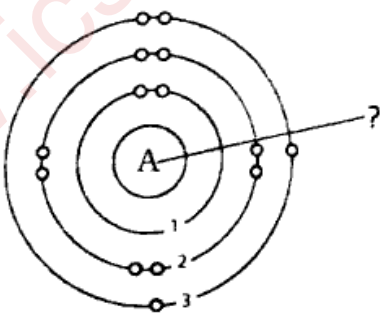
iii) Give the formulae of the following: [5]

a. Oxide
b. Carbonate
c. Cuprous ion
d. Hydroxide
e. Lead ion

iv) Match the following: [5]

Column A	Column B
1. Incompressible	A. Nucleus
2. Alloy	B. Iron nails and sand
3. The central core of an atom	C. Diatomic molecule
4. Use of magnet	D. Solid
5. Chlorine gas	E. Brass and Bronze

v) Picture based questions: [5]



a. The path along which electrons revolve is called _____
b. The smallest form of an element is _____
c. Name the particle which revolve along the circular path and also mention its charge.
d. Identify A: What kind of charge is present at the centre
e. Name the sub-atomic particles present at the centre A.

SECTION – B
(Attempt any four questions)

Question 3

i. On the basis of molecular theory, explain why gases have neither definite shape nor definite volume. [2]
ii. Differentiate between exothermic and endothermic changes with one example for each. [4]
iii. What do the following formulae represent.. [2]
a. 2O b. $5CO_2$
iv. Name two radicals each, with the valency +1 and +2 respectively. [2]

Question 4

i. Give three differences between physical & chemical changes with one example each. [3]
ii. Define the following: [2]

a. Heterogeneous mixture.
b. Force of adhesion.

iii. Write the number of atoms of each element in the molecules of the following compounds [2]

a. $Pb(NO_3)_2$ b. K_2CO_3

iv. Identify the separation techniques required to separate the constituents of the following mixtures. [3]

a. Mixture of water and kerosene oil.
b. Coloured components present in dyes.
c. Obtaining drinking water from sea water in gulf countries.

Question 5

i. What is variable valency? Give two examples of elements having variable valency (Also mention their valencies) [3]

ii. Differentiate between the 3 states of matter based on the following parameters: [3]

a. Free surface b. Compressibility

iii. Write the formulae of the following salts by criss cross method [4]

a. Sodium carbonate b. Zinc hydroxide
c. Lead nitrate d. Aluminium chloride

Question 6

i. What do you understand by the following terms. [2]

a. Fractional distillation b. Atomicity

ii. Give two reasons to support that water is a compound. [2]

iii. Write the chemical names of the following compounds.: [4]

a. H_2SO_4 b. NaOH
c. $CuSO_4$ d. CH_4

iv. Name: [2]

a. Two mixtures from daily life
b. Two gaseous elements.

Question 7

i. Case study based question: [2]

Take a small quantity of quicklime (calcium oxide) in a beaker. Slowly add enough water to the beaker so that the quicklime remains submerged in the water. Leave the beaker undisturbed for some time.

a. What do you observe after performing the experiment.
b. Mention the conclusion regarding the activity.

ii. Give two examples for the following: [3]

a. Molecules with similar kind of atoms.
a. Noble gases along with their symbol.
b. Two compounds from daily life.

iii. Name the following radicals. [3]

a. S^{-} b. NH_4^{+} c. Br^{-}

iv. Classify the following changes. [2]

a. Ripening of fruits
b. Beating metals into their sheets.
c. Magnetisation of iron.
d. Burning of a candle.