Half Yearly Examination 2025-26

Class – VIII

Subject – Chemistry

Time : 2.30 hrs. **M.M.80**

Instruction :- * All questions are compulsory.

*** Read the question paper carefully. You will not be allowed to write during first 15 minutes. This time is to be spent in reading the question paper.**

*** This paper is divided into 2 Sections.**

*** Section A is compulsory. Attempt any four questions from Section B.**

Section – A (40 Marks)

Q1(i) Multiple choice questions - 12

1. There is usually an Apparent change in weight during a -
   (a) Physical change (b) Chemical change (c) Reversible change (d) None of these
2. Alcohol in water is an example of-
   (a) Homogeneous mixture (b) Heterogeneous mixture
   (c) Both (a) and (b) (d) none of these
3. Why do isotopes have same electronic configurations ?
   (a) They have same number of electrons (b) They have same number of neutrons
   (c) They have same number of protons (d) They have same mass number
4. Which noble gas has two electrons in its valence shell
   (a) Helium **(b)** Neon **(c) Argon** **(d) Xenon**
5. Which one is monovalent –
   (a) Magnesium (b) Sodium (c) Calcium (d) Iron
6. Element with variable valencies –
   (a) Mg (b) Al (c) Fe (d) Zn
7. The Radioactive isotopes used in the cure of thyroid cancer is –
   (a) P-32 (b) Ca-60 (c) Na-23 (d) i-131
8. The decomposition of sodium bicarbonate on heating is –
   (a) A catalysed reaction (b) An endothermic reaction
   (c) An exothermic reaction (d) None of these
9. Mechanical separation is used to separate the constituents of –
   (a) Molecule (b) Element **(c) Compound** **(d) Mixture**
10. Which is not a compound –
    (a) Water **(b) carbon** (c) carbon dioxide (d) Nitrogen dioxide

Diagram based questions –

11. Which element has the electronic configuration shown in the figure 1 ?
    (a) Hydrogen (b) Helium
    (c) Carbon (d) Oxygen

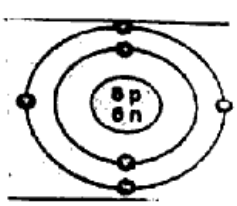
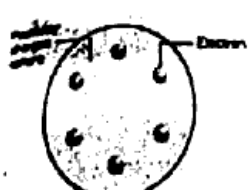


figure 1

12. Name the atomic model proposed by Scientist J.J. Thompson shown in the (figure 2).
    (a) Pineapple pudding (b) Apple pie pudding model
    (c) Thomson electron model (d) None of these



(ii) Assertion – Reason type questions.

In the questions given below, there are two statements marked as Assertion [A] and Reason [R]. Read the statements and choose the correct option.

(a) If both Assertion [A] and Reason [R] are correct and Reason [R] is the correct explanation of Assertion [A].

(b) If both Assertion [A] and Reason [R] are correct but Reason [R] is not the correct explanation of Assertion [A].

(c) If Assertion [A] is true but Reason [R] is false.

(d) If Assertion [A] is false but Reason [R] is true.

13. Assertion [A] : We can use decantation to remove sand particles from water.
Reason [B] : Sand shows magnetic Properties.

14. Assertion [A] : Electrons in the outermost shell experience very small nuclear force.
Reason [B] : The distance between electron and nucleus is Greater.

15. Assertion [A] : Flood is a non periodic change.
Reason [B] : Non periodic changes do not occur at regular intervals.

Q2. Fill in the blanks - 5

a. For lower valency suffix.....is used.
b. Alpha particle consist of two protons and .....neutrons.
c. The clear liquid above sediment is called .....liquid.
d. The K-shell of an atom can have maximum of .....electrons.
e. The chemical formula of Ammonium Chloride is .....

Q3. Statements given below are incorrect. Write the correct statement. 5

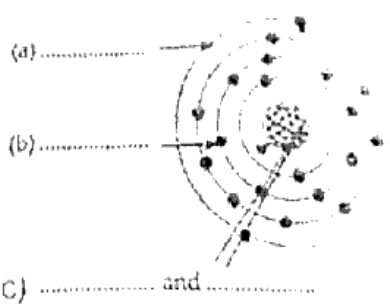
a. The chemical Formula of zinc chloride is ZnCl.
b. Metal always from negatively charged ions.
c. A formula represents a short form of specific element.
d. An element has atomic number 17 it's valency is – 2.
e. The constituents of a mixture are present in fixed ratio.

Q4. Match the column - 5

Column – A	**Column – B**
(a) Sodium – 24	(i) number of protons
(b) $NaNO_3$	(ii) Radioactive element
(c) Number of Elements discovered	(iii) number of protons and neutrons
(d) Mass number	(iv) number of neutrons
(e) Atomic number	(v) sodium nitrate
	(vi) 118
	(vii) sodium nitrite
	(viii) 128

Q5. Observe the diagram and answer the questions that followed by it. [2+1+1+1]

a. label the given picture.
b. How many electrons does it have ?
c. What is its atomic number ?
d. What is the valency of given element.



Q6. Project - 5

Section – B [Do any four Questions]

Q7(a) Read the given information carefully and answer the questions that follows :- [1+1+1+2]

Rahul mixed lemon juice, sugar and water together to make lemonade. The lemonade had a uniform colour. Rahul could add more sugar or lemon juice to taste.

1. What type of mixture is lemonade ?
2. Does lemonade have a uniform taste ?
3. Can the ingredients in lemonade be separated easily ?
4. Name the method by which you can separate sugar from the lemonade.

(b) **Differentiate between (any two).** 3

(i) slow and fast changes

(ii) cation and anion

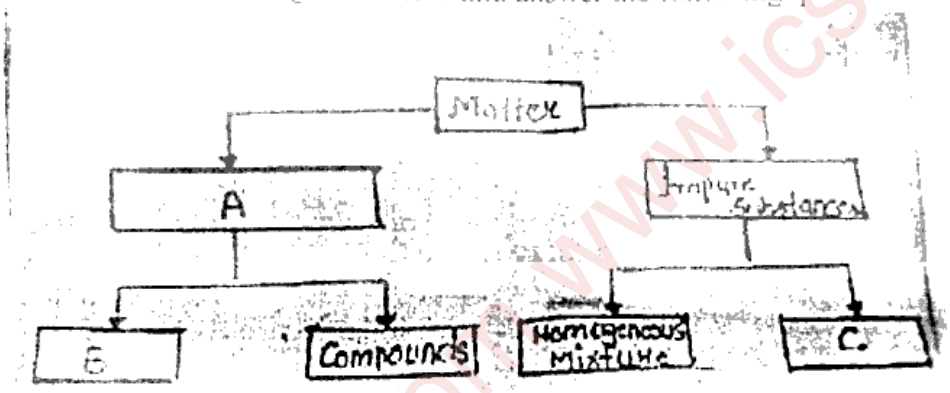
(iii) nuclear fusion and nuclear fission

(c) **Give reasons :-** 2

(i) Melting of ice is a physical change

(ii) An atom is electrically stable.

Q8(a) Look at the flowchart given below and answer the following questions [3+1+1]



(i) label A, B, C

(ii) Define B

(iii) Give one example of C

(b) Balance the following equations -

(i) $Fe + HCl \rightarrow Fe Cl_2 + H_2$

(ii) $P + O_2 \rightarrow P_2O_5$

(c) Write the valencies of the following.

Chlorine, Magnesium, Calcium

Q9(a) Read the passage carefully and answer the questions that follows :-

Physical changes are reversible, meaning the original substance can be recovered. Chemical changes, however, are often irreversible.

(i) Is the process of dissolving salt in water a physical or chemical change ?

(ii) What type of change occurs when a candle burns ?

(iii) What is an example of a physical change that occurs in nature ?

(iv) Write any two characteristics of physical change.

(b) Differentiate between (any one). (3 points only. 3

(i) Exothermic reaction and Endothermic reaction

(ii) Mixture and compound.

(c) **Give reasons : (any one).**

(i) Nucleus of an atom is heavy and positively charged.

(ii) Formation of curd from milk is a chemical change.

Q10(a). What are electronic configuration for the following.

(i) Argon (atomic number 18) (ii) Nitrogen (atomic number 7)

b. Calculate the number of electrons and neutrons in the following -

(i) $_{19}K^{39}$ (ii) $_{15}P^{31}$

c. State the law of conservation of mass.

Q11(a) **Draw geometric diagram of three isotopes of hydrogen.**

(b) Define sublimation, State the kind of mixture in which this method is used.

(c) State a method to separate the following mixtures.

(i) Mixture of ammonium chloride and common salt.

(ii) Mixture of sand and water.

(iii) Mixture of sugar and water

(iv) Mixture of kerosene oil and water

Q12(a) Write the chemical formulae of the following compounds.

Calcium chloride, Magnesium sulphate, sodium hydroxide, Lead monoxide

(b) Define (any two) : radioactivity, bound electrons, evaporation

(c) State the use of -

(i) Ca – 60 (ii) Phosphorus (P-32)