

Time : 1 Hour 30 Minute

STD 10 Science
Chapter Based Test

Total Marks : 50

SECTION A

* Select and write one most appropriate option out of the four options given [7]
for each of the questions

1. Malachite is an ore of:
(A) Iron (B) Copper (C) Mercury (D) Zinc
2. 2mL each of concentrated HCl, HNO₃ and a mixture of concentrated HCl and concentrated HNO₃ in the ratio of 3 : 1 were taken in test tubes labelled as A, B and C. A small piece of metal was put in each test tube. No change occurred in test tubes A and B but the metal got dissolved in test tube C respectively. The metal could be:
(A) Al (B) Au (C) Cu (D) Pt
3. The molecules having triple bond in them are:
(A) Oxygen and ethyne. (B) Carbon dioxide and ammonia. (C) Methane and ethene. (D) Nitrogen and ethyne.
4. Which of the following can undergo a chemical reaction?
(A) MgSO₄ + Fe. (B) ZnSO₄ + Fe. (C) MgSO₄ + Pb. (D) CuSO₄ + Fe.
5. Which one of the following four metals would be displaced from the solution of its salts by other three metals?
 - a. Mg
 - b. Ag
 - c. Zn
 - d. Cu
6. The metal which is always present in an amalgam is:
 - a. Iron.
 - b. Aluminium.
 - c. Mercury.
 - d. Magnesium.
7. The elements whose oxides can turn litmus solution red are:
 - a. Lithium and sodium.
 - b. Copper and potassium.
 - c. Carbon and hydrogen.
 - d. Phosphorus and sulphur.

* Assertion - Reasoning based questions.

[3]

8. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

- a. Both A and R are true, and R is correct explanation of the assertion.
- b. Both A and R are true, but R is not the correct explanation of the assertion.
- c. A is true, but R is false.
- d. A is false, but R is true.

Assertion: Non-metals are electronegative in nature.

Reason: They have tendency to lose electrons.

9. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:
- a. Both A and R are true, and R is correct explanation of the assertion.
 - b. Both A and R are true, but R is not the correct explanation of the assertion.
 - c. A is true, but R is false.
 - d. A is false, but R is true.

Assertion: The property of beating a metal into sheets is called ductility.

Reason: Gold and silver are most malleable metals.

10. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:
- a. Both A and R are true, and R is correct explanation of the assertion.
 - b. Both A and R are true, but R is not the correct explanation of the assertion.
 - c. A is true, but R is false.
 - d. A is false, but R is true.

Assertion: The oxides of sulfur and phosphorus are acidic in nature.

Reason: Metal oxides are basic in nature.

* **Fill in the blank with correct answer.[1 Mark each]** [2]

11. The corrosion of iron is called _____.
12. The electrical conductivity and melting point of an alloy is _____ than that of pure metals.

* **Answer the questions.[1 Mark each]** [2]

13. Name two metals which can, however, liberate hydrogen gas from very dilute nitric acid.
14. Which metal foil is used for packing some of the medicine tablets?

SECTION B

* **Answer the following question. :** [10]

1. Why is white phosphorus kept immersed under water?
2. What is meant by the 'concentration of ore'?
3. What is an ionic bond? What type of bond is present in oxygen molecule?
4. With the help of examples, describe how metal oxides differ from non-metal oxides.
5. What type of oxides are formed when non-metals react with oxygen? Explain with an example.

SECTION C

*** Answer short answer questions. [3 Mark each]**

[12]

1. An element A reacts with water to form a compound B which is used in white washing. The compound B on heating forms an oxide C which on treatment with water gives back B. Identify A, B and C and give the reactions involved.
2. Will carbon monoxide (CO) change the colour of blue litmus?
3. An ore, on heating in air, give Sulphur dioxide gas. Name the method in each metallurgical step that will be required to extract this metal from its ore.
4. Explain the formation of a chlorine molecule on the basis of electronic theory of valency.

SECTION D

*** Long answer questions [5 Mark each]**

[10]

1. a. Given below are the steps for extraction of copper from its ore. Write the reaction involved.
 1. Roasting of copper (I) sulphide.
 2. Reduction of copper (I) oxide with copper (I) sulphide.
 3. Electrolytic refining.b. Draw a neat and well labelled diagram for electrolytic refining of copper.
2. State five uses of metals and five of non-metals.

SECTION E

*** case - based/data -based questions**

[4]

1. Read the following and answer any three questions from (i) to (iv).

Ionic compound is a chemical compound in which ions are held together by ionic bonds. An ionic bond is the type of chemical bond in which two oppositely charged ions are held through electrostatic forces. We know that, metal atoms have loosely bound valence electrons in their valence shell and non-metal atoms need electrons in their valence shell to attain noble gas configuration. The metal atom loses the valence electrons while non-metal atom accepts these electrons. By losing electrons, metal atoms change to cations and by accepting electrons, non-metals form anions. Ionic compounds are generally solid and exist in the form of crystal. They have high melting and boiling points.

 - i. Write two element which can change to a cation?
 - ii. Write two element which can change to an anion?
 - iii. Which Ionic compounds are soluble and how?

OR

 - iv. What are Ionic compounds? Give two examples.