

Practice Questions - Term I

Date: 16/11/2021

Subject: Chemistry

Topic : Metals and Non-Metals

Class: X

1. Which of the following metals form amphoteric oxide?
 - A. Copper
 - B. Silver
 - C. Aluminium
 - D. Iron

2. Beakers A, B, and C contain zinc sulphate, silver nitrate, and ferrous sulphate solutions respectively. Copper pieces are added to each beaker. Blue colour solution will appear in case of beaker:
 - A. C
 - B. B
 - C. B & C
 - D. A & C

3. The atomic number of two elements A and B are 12 and 8 respectively. What type of a compound is formed when they combine?
 - A. Ionic compound
 - B. Covalent compound
 - C. Coordinate compound
 - D. No compound is formed

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4. Which of the given metals exhibits both reactions (a) as well as (b)?

(a) $\text{Metal} + \text{Oxygen} \rightarrow \text{Metal oxide}$

(b) $\text{Metal} + \text{Cold water or hot water or steam} \rightarrow \text{Metal hydroxide} + \text{Hydrogen}$

- A.** Magnesium (Mg), iron (Fe), sodium (Na), and copper (Cu)
- B.** Magnesium (Mg), zinc (Zn), platinum (Pt), and gold (Au)
- C.** Sodium (Na), potassium (K), magnesium (Mg) and calcium (Ca)
- D.** Copper (Cu), magnesium (Mg), gold (Au), and sodium (Na)

5. Three metals X, Y and Z are given. X reacts with cold water, hot water and steam. Y reacts with hot water and steam and Z reacts with steam only. Identify X, Y, and Z from the below options.

X:- Sodium

A. Y:- Zinc

Z:- Magnesium

X:- Copper

B. Y:- Magnesium

Z:- Zinc

X:- Magnesium

C. Y:- Zinc

Z:- Potassium

X:- Sodium

D. Y:- Magnesium

Z:- Zinc

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6. Observe the table and identify metals and non-metals. Select the correct option.

Sl.No	Set-1	Set-2
1.	Sodium (Na)	Oxygen (O)
2.	Magnesium (Mg)	Chlorine (Cl)
3.	Iron (Fe)	Nitrogen (N)
4.	Gold (Au)	Sulphur (S)
5.	Calcium (Ca)	Carbon (C)

- A.** Set 1: Metals and set 2: Non-metals
- B.** Set 1: Non-metals and set 2: Metals
- C.** Both sets 1 & 2 are metals
- D.** Both sets 1 & 2 are non-metals
7. Select the correct option in which metals are arranged correctly according to their reactivity.
- A.** $\text{Fe} > \text{Cu} > \text{Al} > \text{Ca}$
- B.** $\text{Zn} > \text{Fe} > \text{Pb} > \text{Cu}$
- C.** $\text{Cu} > \text{Al} > \text{Mg} > \text{Ca}$
- D.** $\text{Pb} > \text{Cu} > \text{Fe} > \text{Ca}$
8. P, Q, R, S and T are metals in the decreasing order of their reactivity in the activity series. Which one of them is most likely to occur in a free state in nature?

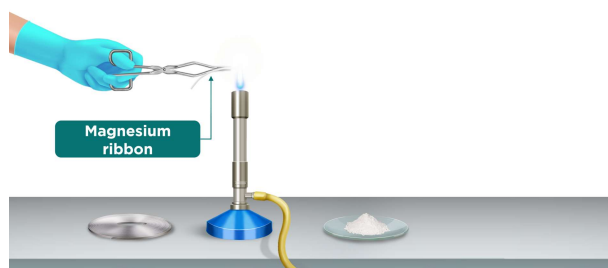
- A.** P
- B.** Q
- C.** S
- D.** T

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9. Which of the following oxides is basic in nature?
- A. SO_2
 - B. CO_2
 - C. K_2O
 - D. Cl_2O
10. Which of the following properties is not shown by ionic compounds?
- A. High electrical conductivity in solid state
 - B. Solubility in water
 - C. High melting and boiling points
 - D. Crystalline solids at room temperature
11. Assertion (A): The handles of cooking pans are not made up of metals.
Reason (R): Metals are good thermal conductors.
- A. Both A and R are true and R is the correct explanation of A
 - B. Both A and R are true but R is not the correct explanation of A
 - C. A is true but R is false
 - D. A is false but R is true
12. Which of the following is correct?
- A. Acids are always kept in metallic vessels.
 - B. Some metals catch fire easily when they come in contact with air.
 - C. All metals are solid at room temperature.
 - D. Copper reacts with $\text{dil. H}_2\text{SO}_4$ and evolves H_2 gas.

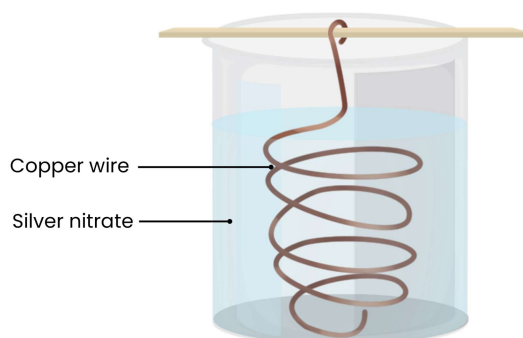
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13. A student performs an experiment of burning magnesium ribbon in the air. A chemical reaction takes place and as a result, a white powder X forms along with a bright white light.



The aqueous solution of X changes _____.

- A. red litmus to blue
 - B. blue litmus to red
 - C. red litmus to colourless
 - D. blue litmus to colourless
14. A student performs an experiment in which he dipped a copper coil to the silver nitrate solution.



Which of the following is the correct observation related to this experiment?

- A. Colour of the solution changes to green.
- B. Gray coloured layer of silver appears on the surface of copper coil.
- C. The copper coil remains unaffected by the reaction.

D. The colour of the solution remains the same.

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15. Metal M is a major constituent of steel. On reaction with dilute hydrochloric acid, M releases a gas G which burns with a pop sound along with the formation of a greenish coloured solution C.

(i) Identify 'M' and 'G' from the following:

- A. M: Iron, G: Hydrogen gas
 - B. M: Iron, G: Carbon dioxide gas
 - C. M: Magnesium, G: Hydrogen gas
 - D. M: Magnesium, G: Carbon dioxide gas
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(ii) Which of the following is the correct formula of solution 'C'?

- A. FeCl
 - B. MgCl_2
 - C. FeCl_2
 - D. MgCl
17. Metal M is a major constituent of steel. On reaction with dilute hydrochloric acid, M releases a gas G which burns with a pop sound along with the formation of a greenish coloured solution C.

(iii) Which of the following metals will displace metal 'M' from its solution 'C'?

- A. Aluminium
- B. Gold
- C. Lead
- D. Silver

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18. Metal M is a major constituent of steel. On reaction with dilute hydrochloric acid, M releases a gas G which burns with a pop sound along with the formation of a greenish coloured solution C.

(iv) M can displace the metal from which of the following compounds in their aqueous solutions?

- A. Zinc nitrate
 - B. Magnesium sulphate
 - C. Calcium chloride
 - D. Silver nitrate
19. Given below is a table containing a few metals and non-metals with exceptional properties. Fill the dark spaces by identifying X, Y and Z in the table.

Sl.	Element	Category	Exceptional property
1.	Graphite (C)	Non-metal	Conducts Electricity
2.	Diamond (C)	Non-metal	Hardest natural substance
3.	Iodine (I)	Non-metal	Z
4.	Potassium (K)	Y	Soft (can be cut with knife)
5.	X	Metal	Low M.P. (melts in hand)

- A. X - Gallium (Ga); Y - Metal; Z - Lustrous
- B. X - Gallium (Ga); Y - Metal; Z - Sonorous
- C. X - Carbon (C); Y - Non-metal; Z - Lustrous
- D. X - Silver (Ag); Y - Metal; Z - Ductile

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20. Statement I:- Hydrogen gas is not evolved when zinc reacts with cold water.

Statement II:- Sodium reacts vigorously with cold water to produce sodium hydroxide and hydrogen gas.

- A. Only statement I is true.
- B. Only statement II is true.
- C. Both statements are true.
- D. Both statements are false.