



Metals and Non-metals

Grade 10

Worksheet

Multiple Choice Questions

- Gold is used for making jewellery. What are the properties of gold that make it a suitable metal for making jewellery?
 - Ductility
 - Malleability
 - Lustrous
 - All of these
- Aluminium is used for making cooking utensils. What are the following properties of Aluminium are responsible for the same?
 - Good thermal conductivity
 - Good electrical conductivity
 - Ductility
 - High melting point

(a) 1 and 2 (b) 1 and 3 (c) 2 and 3 (d) 1 and 4
- Which of the following oxide of iron would be obtained on prolonged reaction of iron with steam?
 - FeO
 - Fe₂O₃
 - Fe₃O₄
 - Fe₂O₃ and Fe₃O₄
- The correct order of increasing chemical reactivity is
 - Fe < Zn < Mg < K
 - Zn < Fe < Mg < K
 - Fe < Mg < Zn < K
 - Zn < Fe < K < Mg
- Which of the following metals will not give H₂ (g) with H₂O?
 - Na (s) + 2H₂O →
 - Mg (s) + H₂O →
 - Zn (s) + 2H₂O →
 - Cu (s) + 2H₂O →
- A few particles of Zn are dropped in the CuSO₄ solution, the correct observation is.....

- (a) Blue colour of CuSO_4 solution fades
 - (b) Solution changes to red colour
 - (c) Solution becomes black
 - (d) Solution becomes silvery white
7. Which of the following non-metal is liquid at room temperature?
- (a) Mercury
 - (b) Carbon
 - (c) Phosphorous
 - (d) Bromine
8. The combination of carbon monoxide and hydrogen is known as
- (a) Carbon gas
 - (b) Coal gas
 - (c) Carbonic gas
 - (d) Water gas
9. Which of the following are not ionic compounds?
- 1. KCl
 - 2. HCl
 - 3. CCl_4
 - 4. NaCl
- (a) 1 and 2 (b) 2 and 3 (c) 3 and 4 (d) 1 and 3
10. Which one of the following properties is not generally exhibited by ionic compounds?
- (a) Solubility in water
 - (b) Electrical conductivity in solid state
 - (c) High melting and boiling points
 - (d) Electrical conductivity in molten state

Answer the Following

11. Write one example of each of
- (i) a metal which is so soft that, it can be cut with knife and a non-metal which is the hardest substance.
 - (ii) A metal and a non-metal which exist as liquid at room temperature.
12. Mention the names of the metals for the following:
- (i) Two metals which are alloyed with iron to make stainless steel.
 - (ii) Two metals which are used to make jewellery.
13. Write the electron dot structures for
- (a) Potassium and chlorine.
 - (b) Calcium and sulphur.
 - (c) Calcium and chlorine.

14. You are given samples of three metals. Sodium, magnesium and copper. Suggest any two activities to arrange them in order of decreasing activity.
15. . Give reason for the following:
- (a) School bells are made up of metals.
 - (b) Electric wires are made up of copper.
16. . (a) Define activity series of metals. Arrange the metals gold, copper, iron and magnesium in order of their increase in reactivity.
- (b) What will you observe when:
- (i) Some zinc pieces are put in copper sulphate solution.
 - (ii) Some silver pieces are put into green coloured ferrous sulphate solution.
17. Name the following:
- (a) A metal, which is preserved in kerosene.
 - (b) A lustrous coloured non-metal.
 - (c) A metal, which can melt while kept on palm.
 - (d) A metal, which is a poor conductor of heat.
18. Give reason for the following:
- (a) Aluminium oxide is considered as an amphoteric oxide.
 - (b) Ionic compounds conduct electricity in molten state.
19. State reasons for the following:
- (i) Sulphur is a non-metal
 - (ii) Magnesium is a metal
20. Write two differences between calcination and roasting.
21. A reddish-brown metal „X“, when heated in air, gives a black compound „Y“, which when heated in presence of H₂ gas gives „X“ back. „X“ is refined by the process of electrolysis; this refined form of „X“ is used in electrical wiring. Identify „X“ and „Y“. Draw a well-labeled diagram to represent the process of refining „X“.
22. The given reaction shows one of the processes to extract metals like Iron and Manganese. $\text{MnO}_2 (\text{s}) + \text{Al}(\text{s}) \rightarrow \text{Mn}(\text{l}) + \text{Al}_2 \text{O}_3 (\text{s}) + \text{Heat}$
- a) Give reason why the above reaction is known as a thermite reaction.
 - b) Identify the substance oxidised and reduced in the above reaction.
 - c) Give a reason why Aluminium is preferably used in thermite reactions.

23. Assertion: Rusting of Iron is endothermic in nature.
Reason: As the reaction is slow, the release of heat is barely evident.
- a) Both A and R are true, and R is the correct explanation of A.
 - b) Both A and R are true, and R is not the correct explanation of A.
 - c) A is true but R is false.
 - d) A is false but R is true.
24. On adding dilute sulphuric acid to a test tube containing a metal „X“, a colourless gas is produced when a burning match stick is brought near it. Which of the following correctly represents metal „X“?
- a) Sodium
 - b) Zinc
 - c) Copper
 - d) Silver