

Science | Worksheet | Grade X
Metal & Non-Metal (2 marks)

1. Metals at the top of the activity series do not occur in the free state. Explain
2. An atom X has seven valence electrons and another atom Y has two valence electrons. Write the formula of the compound formed between X and Y. also predict the type of bond formed between them.
3. What happens when:
 - (a) Iron nail is placed in silver nitrate solution
 - (b) Iron strip is dipped in zinc sulphate solution
4. Give reason for the following:
 - (a) Metals replace hydrogen from dilute acids whereas non-metals do not
 - (b) Calcium can react with hydrogen while iron doesn't
5. Differentiate between calcinations & roasting.
6. Explain why, the galvanized iron article is protected against rusting even if the zinc layer is broken.
7. What are constituents of bronze? Write its two main uses? Name the common constituent of brass and bronze.
8. Name an ore of zinc other than zinc oxide. By what process can this ore be converted to zinc oxide?
9. An iron knife kept dipped in a blue copper sulphate solution, the colour of the solution changes to light green. Why?
10. Write chemical equations for the reactions taking place when:
 - (a) Zinc sulphide is heated in air
 - (b) Reduction of lead oxide by carbon
11. (a) Name the chief ore of iron. Write its formula.
 - (b) How is an iron ore concentrated? Describe it briefly.

12. Define the term 'alloy'. Write two advantages of making alloys
13. Write chemical equations for reactions taking place when
- Manganese dioxide is heated with aluminum powder
 - Steam is passed over hot iron
14. Give reasons for each of the following:
- Germanium is called a metalloid
 - Gold is known as a precious metal
15. The atomic number of magnesium is 12 and chlorine is 17. Show the formation of magnesium chloride by the transfer of electrons
16. Write chemical equations to show the reactions taking place when:
- Zinc carbonate is calcined
 - Carbon dioxide gas is bubbled into lime water for a long time
17. State three reasons for counting sulphur amongst the non-metals
18. Give reasons:
- Ionic compounds have high melting point
 - Ionic compounds are hard crystalline solids
19. Explain the meaning of malleable and ductile
20. How does the term "Ore" differ from "Mineral"? Give an example
21. What are the three major steps involved in extraction of a metal after its ore is mined?
22. Name two metals which will displace hydrogen from dilute acids, and two metals which will not
23. What are amphoteric oxides? Give two examples of amphoteric oxides with balanced chemical reactions?
24. Show formation of NaCl by transfer of electrons. Give any two properties of ionic compounds
25. Aluminium occurs in combined state whereas gold is found in free state. Why?
26. A copper plate was dipped in AgNO₃ solution. After certain time silver from the solution was deposited on the copper plate. State the reason why it happened. Give the chemical equation of the reaction involved.

27. An element X on reacting with oxygen forms an oxide X_2O . This oxide dissolves in water and turns blue litmus red.
28. Why are the two non-metals, carbon and hydrogen important chemical reference points with regard to the method of metal extraction and reactivity towards acids.
29. What is the behavior of magnesium when it is heated and steam is passed over it? Represent the equation.
30. Can carbon dioxide react with magnesium?
31. A zinc rod was kept in a glass container having $CuSO_4$ solution. On examining, it was found that the blue color of the solution had faded. After few days when the zinc rod was taken out of the solution, a number of small holes were noticed in it. State the reason and give equation of chemical reaction involved.
32. What is metallurgy?
33. What is gangue and what is concentration?