WORKSHEET 1

CHAPTER 7 – METALLURGY

A. Tick (✓) the correct option.

1. Name a metal which has a large atomic size and is light in weight.
   a. Aluminium b. Lithium c. Zinc d. Copper
2. Name a metallic oxide which is reduced to metal by electrolysis.
   a. Silver oxide b. Magnesium oxide c. Copper oxide d. Iron(III) oxide
3. Name a non-metal with a lustre, which conducts electricity.
   a. Sulphur b. Silicon c. Graphite d. Iodine
4. Name a metal which does not react with dilute sulphuric acid.
   a. Magnesium b. Aluminium c. Zinc d. Copper
5. Which one of these is a neutral oxide?
   a. Nitrous oxide b. Nitrogen dioxide c. Copper(II) oxide d. Carbon dioxide

B. Fill in the blanks from the choices given within the brackets.

1. The metal which does not react with water or dilute sulphuric acid, but reacts with concentrated sulphuric acid is _____ (Al/Cu/Zn/Fe)
2. The metal whose hydroxide does not decompose on heating, but its nitrate decomposes is _____ (Ca/Al/Na/Fe)
3. The metal whose carbonate and nitrate on thermal decomposition give a residue which is a metal _____ (Fe/Cu/Ag/Ca)
4. The divalent metal whose oxide is reduced to metal by electrolysis of its fused salt is _____ (Al/Na/Mg/K)
5. The metal whose amphoteric oxide is reduced to metal by carbon reduction is _____ (Fe/Cu/Zn/Al)

C. State the composition, reason for alloying and one use for the following alloys.

1. Stainless steel
2. Brass
3. Type metal
4. Bronze
5. Solder

Name: ..... Teacher's signature: .....

Class: X Date: .....

D. Write the names and formulae of the non-metals which exhibit the following properties:

1. A non-metal having lustre and is a good conductor of electricity.
2. A non-metal, which is the hardest naturally occurring substance.
3. Two non-metals whose oxides are neutral towards litmus.
4. A non-metal which is liquid at the room temperature.
5. A non-metal which is kept under water.

E. Zinc is extracted from zinc blende. Zinc blende is roasted. The solid product is mixed with coke in a blast furnace from which zinc vapour emerges.

1. What is the zinc compound in zinc blende?
2. Write the equation for the roasting of zinc blende.
3. What is the purpose of using coke?
4. Which is the reducing agent in this extraction?
5. How is the zinc vapour condensed to liquid?

ANSWERS

WORKSHEET 1

A. Tick (✓) the correct option.

1. a
2. b
3. c
4. d
5. a

B. Fill in the blanks from the choices given within the brackets.

1. Cu
2. Na
3. Ag
4. Mg
5. Zn

C. State the composition, reason for alloying and one use for the following alloys.

1. **Stainless steel:** It contains Fe, Cr, C and Ni. It resists corrosion and is used for making kitchen utensils.
2. **Brass:** It contains copper and zinc. It can be easily moulded and is used in making shells of gun, ammunition and utensils.
3. **Type metal:** It contains lead, tin and antimony. It is very hard and expands on cooling. It is used for making printing type.
4. **Bronze:** It contains copper, zinc and tin. It does not corrode and take very high polish. It is used for making coins, statues and utensils .
5. **Solder:** It contains lead and tin. It has a very low melting point of 200° C approx. It is used for making electric fuses and soldering electric wires.

D. Write the names and formulae of the non-metals which exhibit the following properties:

1. Graphite (an allotrope of carbon). Formula : C
2. Diamond (an allotrope of carbon). Formula : C
3. Oxides of hydrogen H_2O and nitrogen (NO) are neutral towards litmus. Formula: H_2 and N_2
4. Bromine is liquid at the room temperature. Formula : Br_2
5. Phosphorus is kept under water. Formula : P_4

E. Answer the following.

1. ZnS
2. $2ZnS + 3O_2 \rightarrow 2ZnO + 2SO_2$
3. Used as reducing agent
4. Coke
5. Zinc vapours are condensed to liquid in a condenser.