

QB365

Important Questions - Metals and Non-Metals

10th Standard CBSE

Science

Reg.No. :

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Time : 01:00:00 Hrs

Total Marks : 50

Section - A

- 1) Food cans are coated with tin and not with zinc because 1
(a) Zinc is costlier than tin (b) Zinc has a higher melting point than tin (c) Zinc is more reactive than tin
(d) Zinc is less reactive than tin
- 2) Which one of the following metals do not react with cold as well as hot water? 1
(a) Na (b) Ca (c) Mg (d) Fe
- 3) What happens when calcium is treated with water? (i) It does not react with water. (ii) It reacts violently with water. (iii) It reacts less violently with water. (iv) Bubbles of hydrogen gas formed stick to the surface of calcium. 1
(a) (i) and (iv) (b) (ii) and (iii) (c) (i) and (ii) (d) (iii) and (iv)
- 4) Which one of the following properties is not generally exhibited by ionic compounds? 1
(a) Solubility in water (b) Electrical conductivity in solid state (c) High melting and boiling points
(d) Electrical conductivity in molten state
- 5) Stainless steel is very useful material for our life. In stainless steel, iron is mixed with 1
(a) Ni and Cr (b) Cu and Cr (c) Ni and Cu (d) Cu and Au
- 6) Generally, non-metals are not lustrous. Which of the following nonmetal is lustrous? 1
(a) Sulphur (b) Oxygen (c) Nitrogen (d) Iodine
- 7) An alloy is 1
(a) An element (b) A compound (c) A homogeneous mixture (d) A heterogeneous mixture
- 8) An element A is soft and can be cut with a knife. This is very reactive to air and cannot be kept open in air. It reacts vigorously with water. Identify the element from the following 1
(a) Mg (b) Na (c) P (d) Ca
- 9) The electronic configurations of three elements X, Y and Z are X - 2, 8; Y - 2, 8, 7 and Z - 2, 8, 2. Which of the following is correct? 1
(a) X is a metal (b) Y is a metal (c) Z is a non-metal (d) Y is a non-metal and Z is a metal
- 10) Which of the following can undergo a chemical reaction? 1
(a) $\text{MgSO}_4 + \text{Fe}$ (b) $\text{ZnSO}_4 + \text{Fe}$ (c) $\text{MgSO}_4 + \text{Pb}$ (d) $\text{CuSO}_4 + \text{Fe}$

Section - B

- 11) Explain the meanings of malleable and ductile. 2

- 12) What are amphoteric oxides? Give two examples of amphoteric oxides. 2
- 13) Give the reaction involved during extraction of zinc from its ore by 2
- (a) Roasting of zinc ore
- (b) Calcination of zinc ore
- 14) Name the following: 2
- (i) A metal, which is preserved in kerosene.
- (ii) A lustrous coloured non-metal.
- (iii) A metal, which can melt while kept on palm.
- (iv) A metal, which is a poor conductor of heat.
- 15) (a) Name the chief ore of iron. Write its formula. 2
- (b) How is an iron ore concentrated? Describe it briefly.
- (c) Draw a labelled diagram of the blast furnace used in the extraction of iron from its concentrated ore.
- 16) Why do covalent compounds have low melting point? 2
- 17) Give any five differences between ionic compound and covalent compound. 2
- 18) Point out any 3 differences between calcination and roasting. 2
- 19) Write one example of each of the following: 2
- (i) Most malleable metal and most ductile metal.
- (ii) The best conductor of heat and the poorest conductor of heat.
- (iii) A metal with highest melting point and a metal with lowest melting point.
- 20) Give reasons for the following: 2
- (i) Aluminium is a reactive metal but is still used for packing food articles.
- (ii) Calcium starts floating when water is added to it.

Section - C

- 21) Explain the following 5
- (a) Reactivity of Al decreases if it is dipped in HNO_3 .
- (b) Carbon cannot reduce the oxides of Na or Mg
- (c) NaCl is not a conductor of electricity in solid state whereas it does conduct electricity in aqueous solution as well as in molten state.
- (d) Iron articles are galvanised
- (e) Metals like Na, K, Ca and Mg are never found in their free state in nature.
- 22) Give the steps involved in the extraction of metals of low and medium reactivity from their respective sulphide ores. 5
- 23) (i) Why Sulphuric acid is called the 'king of chemicals'? 5
- (ii) Name the gas evolved when :
- (a) Concentrated Sulphuric acid acts on Sulphur.
- (b) Dilute Sulphuric acid acts on Sodium carbonate.
- (iii) State the colour change you would observe on adding concentrated sulphuric acid to :
- (a) Blue Copper sulphate crystals.
- (b) Colourless cane-sugar crystals.

24) (a) What is an 'activity series' of metals? Arrange the metals Zn, Mg, Al, Cu and Fe in a decreasing order of reactivity.

(b) What would you observe when you put

(i) Some zinc pieces into blue copper sulphate solution?

(ii) Some copper pieces into green ferrous sulphate solution?

(c) Name a metal which combines with hydrogen gas. Name the compound formed.

