

Q1. Alloys are homogeneous mixtures of a metal with a metal or non-metal. Which among the following alloys contain non-metal as one of its constituents? 1 Mark

1. Brass.
2. Bronze.
3. Amalgam.
4. Steel.

**Ans:** 4. Steel.

**Explanation:**

Steel is an alloy which contains iron (a metal) and carbon (a non-metal). If we consider other options, then Brass is an alloy of two metals copper and zinc. Bronze is an alloy of copper and tin. Amalgam is also formed by mixing mercury with other metal.

Q2. The least reactive metal among the following is: 1 Mark

1. Sodium.
2. Silver.
3. Copper.
4. Lead.

**Ans:** 2. Silver.

**Explanation:**

Because silver lies below other metals in the reactivity series.

Q3. A student puts one big iron nail each in four test tubes containing solutions of zinc sulphate, aluminium sulphate, copper sulphate and iron sulphate. A reddish brown coating was observed only on the surface of iron nail which was put in the solution of: 1 Mark

1. Zinc sulphate.
2. Iron sulphate.
3. Copper sulphate.
4. Aluminium sulphate.

**Ans:** 3. Copper sulphate.

**Explanation:**

$\text{CuSO}_4$  Colour Copper Sulphate solution is only changed because according to reactivity series iron is more reactive than copper. That is why it displaced copper from the solution and form iron sulphate....

Q4. Hydrogen gas is not widely used as a reducing agent because: 1 Mark

1. Hydrogen decomposes to atomic hydrogen at higher temperature.
2. Risk of explosion with water.
3. Hydrogen isomerises to ortho hydrogen at higher temperature.
4. Many metals form hydrides at lower temperatures.

**Ans:** 4. Many metals form hydrides at lower temperatures.

**Explanation:**

Hydrogen is actually commonly used as both reducing and oxidising agent. Its reducing properties can be used with Pt or Pd to reduce alkyne and alkene.

Q5. 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 Mark

1. Mg
2. Na

3. P
4. Ca

**Ans:** 2. Na

**Explanation:**

Na is one of the metals that can be cut with a knife. It is highly reactive to air and water.

Q6. 2mL each of concentrated HCl, HNO<sub>3</sub> and a mixture of concentrated HCl and concentrated HNO<sub>3</sub> in the ratio of 3 : 1 were taken in test tubes labelled as A, B and C. A small piece of metal was put in each test tube. No change occurred in test tubes A and B but the metal got dissolved in test tube C respectively. The metal could be: 1 Mark

1. Al
2. Au
3. Cu
4. Pt

**Ans:** 2. Au

**Explanation:** Gold (Au) dissolves in aqua regia.

Q7. The molecules having triple bond in them are: 1 Mark

1. Oxygen and ethyne.
2. Carbon dioxide and ammonia.
3. Methane and ethene.
4. Nitrogen and ethyne.

**Ans:** 4. Nitrogen and ethyne.

**Explanation:**

In a nitrogen molecule, each nitrogen atom shares its 3 electrons to form a triple bond among them. In an ethyne molecule, each carbon atom shares 3 electrons to form a triple bond among them.

Q8. The elements whose oxides can turn phenolphthalein solution pink are: 1 Mark

1. Na and K.
2. K and C.
3. Na and S.
4. K and P.

**Ans:** 1. Na and K.

**Explanation:**

Because Na and K are metals whose oxides are basic in nature, which can turn phenolphthalein solution pink.

Q9. An alloy is: 1 Mark

1. An element.
2. A compound.
3. A homogeneous mixture.
4. A heterogeneous mixture.

**Ans:** 3. A homogeneous mixture.

**Explanation:** A homogeneous mixture of different metals or a metal and a non-metal is called as alloy.

Q10. Which of the following metals are extracted by the electrolysis of their molten chlorides? 1 Mark

1. Na and Hg.
2. Hg and Mg.
3. Na and Mg.
4. Cu and Fe.

**Ans:** 3. Na and Mg.

**Explanation:**

Sodium (Na) and magnesium (Mg) are highly reactive metals. They are not easily reduced by carbon and aluminium. Thus, they are extracted by electrolytic reduction or electrolysis of their molten chlorides (sodium chloride, NaCl, and magnesium chloride, MgCl<sub>2</sub>).

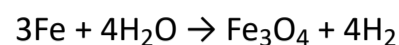
Q11. Which one of the following metals do not react with cold as well as hot water?

1 Mark

1. Na.
2. Ca.
3. Mg.
4. Fe.

**Ans:** 4. Fe.

**Explanation:** Na, Ca and Mg are reactive metals and quickly react with water. At room temperature, the reaction of Fe is very slow but red hot iron reacts with steam to form  $\text{Fe}_3\text{O}_4$  with hydrogen gas.



Q12. A metal M has electronic configuration 2, 8, 3 and occurs in earth's crust and its oxide  $\text{M}_2\text{O}_3$ . It is more reactive than zinc. Which of the following options (s) is/are correct?

1 Mark

1. The metal M is iron.
2. The metal M is lead.
3. The ore from which metal M is extracted is haematite.
4. The ore from which metal M is extracted is bauxite.

**Ans:** 4. The ore from which metal M is extracted is bauxite.

Q13. One of the following compounds is not ionic in nature. This compound is:

1 Mark

1. Lithium chloride.
2. Ammonium chloride.
3. Calcium chloride.
4. Carbon tetrachloride.

**Ans:** 4. Carbon tetrachloride.

**Explanation:**

It is a covalent compound.

Q14. Which of the following alloys contains a non-metal as one of the constituents?

1 Mark

1. Brass.
2. Amalgam.
3. Steel.
4. Bronze.

**Ans:** 3. Steel.

**Explanation:**

Steel is an alloy that contains a non-metal carbon as one of its constituents. It consists of iron with carbon (0.1 to 1.5%).

Q15. The metal which can be extracted from the bauxite ore is:

1 Mark

1. Na
2. Mn
3. Al
4. Hg

**Ans:** 3. Al

**Explanation:**

Aluminium can be extracted from bauxite. Bauxite is an ore of aluminium and the compound is aluminium oxide ( $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ ).

Q16. The articles made of silver metal become dark on prolonged exposure to air. This is due to the formation of a layer of its:

1 Mark

1. Oxide.
2. Hydride.
3. Sulphide.
4. Carbonate.

**Ans:** 3. Sulphide.

**Explanation:**

Silver reacts with hydrogen sulphide gas in the air and forms a thick black layer of silver sulphide ( $\text{Ag}_2\text{S}$ ) on it. Silver jewellery or ornaments become dull because of the formation of silver sulphide coating on their surfaces.

Q17. The atomic number of an element Y is 17. The number of electrons in its ion  $\text{Y}^-$  will be:

1 Mark

1. 17
2. 18
3. 19
4. 20

**Ans:** 2. 18

**Explanation:**

Anion  $\text{Y}^-$  has one more electron than its neutral atom. Y atom has 17 electrons and therefore, in  $\text{Y}^-$ , number of electrons will be  $17 + 1$ .

Q18. The colours of aqueous solution of  $\text{CuSO}_4$  and  $\text{FeSO}_4$  as observed in the laboratory are:

1 Mark

1. Pale green and light blue respectively.
2. Light blue and dark green respectively.
3. Dark blue and dark green respectively.
4. Dark blue and pale green respectively.

**Ans:** 4. Dark blue and pale green respectively.

Q19. The aqueous solutions of copper sulphate and zinc sulphate appear:

1 Mark

1. Blue and green respectively.
2. Green and colourless respectively.
3. Blue and brown respectively.
4. Blue and colourless respectively.

**Ans:** 4. Blue and colourless respectively.

**Explanation:**

The solution of Copper sulphate is Blue in color and that of Zinc sulphate is colorless because zinc is more reactive than copper and displaces copper from copper sulphate solution.

Q20. The composition of aqua-regia is:

1 Mark

1. Dil.HCl : Conc.  $\text{HNO}_3$

3 : 1

2. Conc.HCl : Dil.  $\text{HNO}_3$

3 : 1

3. Conc.HCl : Conc. $\text{HNO}_3$

3 : 1

4. Dil.HCl : Dil. $\text{HNO}_3$

3 : 1

**Ans:** 3. Conc.HCl : Conc. $\text{HNO}_3$

3 : 1

**Explanation:** Aqua-regia is a mixture of concentrated HCl and concentrated  $\text{HNO}_3$  in 3 : 1 ratio.

Q21. Which one of the following properties is not generally exhibited by ionic compounds?

1 Mark

1. Solubility in water.
2. Electrical conductivity in solid state.
3. High melting and boiling points.
4. Electrical conductivity in molten state.

**Ans:** 2. Electrical conductivity in solid state.

**Explanation:**

Ions which can move are responsible for conduction of electricity. In solid state ions present in ionic compounds are not free to move, thus ionic compounds do not show electrical conductivity in solid state whereas ionic compounds show electrical conductivity in molten states.

Q22. Reaction between X and Y, forms compound Z. X loses electron and Y gains electron. Which of the following properties is not shown by Z? 1 Mark

1. Has high melting point.
2. Has low melting point.
3. Conducts electricity in molten state.
4. Occurs as solid.

**Ans:** 2. Has low melting point.

**Explanation:** Z is an ionic compound. Therefore, it is not expected to have low melting point.

Q23. If copper is kept exposed to damp air for a considerable time, it gets a green coating on its surface. This is due to the formation of: 1 Mark

1. Hydrated copper sulphate.
2. Copper oxide.
3. Basic copper carbonate.
4. Copper nitrate.

**Ans:** 3. Basic copper carbonate.

**Explanation:**

Copper reacts slowly with water and carbon dioxide in the atmosphere to form copper carbonate. This gives a green colour coating to its surface.

Q24. Which of the following non-metals is a liquid? 1 Mark

1. Carbon.
2. Bromine.
3. Phosphorus.
4. Sulphur.

**Ans:** 2. Bromine.

**Explanation:**

Metals are generally solid while non-metals are solid, liquid and gas. Bromine is a non-metal and exists as liquid.

Q25. Which among the following statements is incorrect for magnesium metal? 1 Mark

1. It burns in oxygen with a dazzling white flame.
2. It reacts with cold water to form magnesium oxide and evolves hydrogen gas.
3. It reacts with hot water to form magnesium hydroxide and evolves hydrogen gas.
4. It reacts with steam to form magnesium hydroxide and evolves hydrogen gas.

**Ans:** 2. It reacts with cold water to form magnesium oxide and evolves hydrogen gas.

**Explanation:**

Reaction of metals and water produce hydrogen gas and respective hydroxide. For example sodium metal gives sodium hydroxide and liberates hydrogen gas when react with water. Magnesium when reacts with water gives magnesium hydroxide and hydrogen gas and not magnesium oxide.

Q26. Alloys are homogeneous mixtures of a metal with a metal or nonmetal. Which among the following alloys contain non-metal as one of its constituents? 1 Mark

1. Brass.
2. Bronze.
3. Amalgam.
4. Steel.

**Ans:** 4. Steel.

**Explanation:**

1. Brass - Copper and zinc.
2. Bronze - Copper and tin.

3. Amalgam - Mercury with other metals.

4. Steel - Iron with carbon.

Q27. Which of the following are not ionic compounds?

1 Mark

1. KCl
2. HCl
3. CCl<sub>4</sub>
4. NaCl

1. 1 and 2
2. 2 and 3
3. 3 and 4
4. 1 and 3

**Ans:** 2. 2 and 3

**Explanation:** Both HCl and CCl<sub>4</sub> are covalent compounds in nature.

Q28. To show that zinc is a more active metal than copper, the correct procedure is to:

1 Mark

1. Add dilute nitric acid on strips of both the metals.
2. Observe transmission of heat through strips of zinc and copper.
3. Prepare solution of zinc sulphate and hang strip of copper into it.
4. Prepare a solution of copper sulphate and hang strip of zinc into it.

**Ans:** 4. Prepare a solution of copper sulphate and hang strip of zinc into it.

Q29. Which among the following alloys contain mercury as one of its constituents?

1 Mark

1. Stainless steel.
2. Alnico.
3. Solder.
4. Zinc amalgam.

**Ans:** 4. Zinc amalgam.

**Explanation:** Alloys of mercury are called amalgam.

Q30. Electrical wires have a coating of an insulating material. The material, generally used is:

1 Mark

1. Sulphur.
2. Graphite.
3. PVC.
4. All can be used.

**Ans:** 3. PVC.

**Explanation:** PVC (Poly Vinyl Chloride) coatings are generally used for insulating electrical wires.

Q31. Solutions of copper sulphate, iron sulphate and zinc sulphate are prepared and marked I, II and III respectively.

1 Mark

Few pieces of aluminium are added to each solution. After some time a change will be observed in

1. I and II
2. II and III
3. III and I
4. All the three

**Ans:** 4. All the three.

**Explanation:**

Aluminium is highly reactive as compared to Copper, Iron and Zinc. Therefore Aluminium will displace all the metals from its salt. Thus aluminium will appear in all the three solutions.

Q32. An acidic oxide is produced by the element:

1 Mark

1. Na
2. C
3. Ca
4. H

**Ans: 2. C**

**Explanation:**

Because C is a non-metal, its oxide  $\text{CO}_2$  is an acidic oxide.

Q33. Galvanisation is a method of protecting iron from rusting by coating with a thin layer of:

1 Mark

1. Gallium.
2. Aluminium.
3. Zinc.
4. Silver.

**Ans: 3. Zinc.**

**Explanation:** Applying a layer of zinc through electrolysis is called galvanization.

Q34. One of the following is not a neutral oxide. This is:

1 Mark

1. CO
2.  $\text{H}_2\text{O}$
3.  $\text{N}_2\text{O}$
4.  $\text{Na}_2\text{O}$

**Ans: 4.  $\text{Na}_2\text{O}$**

**Explanation:**

Because  $\text{Na}_2\text{O}$  is a metal oxide that is basic in nature.

Q35. An element reacts with oxygen to give a compound with a high melting point. This compound is also soluble in water. The element is likely to be:

1 Mark

1. Calcium.
2. Carbon.
3. Silicon.
4. Iron.

**Ans: 1. Calcium.**

**Explanation:**

Calcium reacts with oxygen to form calcium oxide with a high melting point. This compound is also soluble in water.

Q36. Manganese metal is extracted from manganese dioxide by a reduction process by making use of:

1 Mark

1. Carbon.
2. Hydrogen.
3. Electrolysis.
4. Aluminium.

**Ans: 4. Aluminium.**

**Explanation:**

There are some metals that cannot be satisfactorily reduced by carbon. In such cases, aluminium is used as reducing agent, e.g., manganese.

Q37. Although metals form basic oxides, which of the following metals form an amphoteric oxide?

1 Mark

1. Na
2. Ca
3. Al
4. Cu

**Ans: 3. Al**

**Explanation:** Some of the metals like Aluminium (Al) metal forms amphoteric oxide ( $\text{Al}_2\text{O}_3$ ) which can behave like acid as well as base.

Q38. Generally, non-metals are not conductors of electricity. Which of the following is a good conductor of electricity?

1 Mark

1. Diamond.
2. Graphite.
3. Sulphur.

4. Fullerene.

**Ans:** 2. Graphite.

**Explanation:**

Graphite, which is an allotrope of carbon, is only non-metal which conducts electricity.

Q39. Metal M reacts with oxygen to form metallic oxide MO. This oxide reacts with moisture and carbon dioxide of the atmosphere to form a basic carbonate metal M. The metal 'M' is: 1 Mark

1. Cu
2. Fe
3. Zn
4. Cr

**Ans:** 1. Cu

**Explanation:**

In case of rusting of copper, the metallic copper reacts with oxygen, carbon-dioxide and atmospheric moisture and develops a green coloured coating of copper hydroxide and copper carbonate.

Q40. A metal less reactive and another metal more reactive than hydrogen are: 1 Mark

1. Aluminium and lead.
2. Iron and magnesium.
3. Copper and tin.
4. Copper and mercury.

**Ans:** 3. Copper and tin.

**Explanation:**

Copper lies below hydrogen and tin lies above hydrogen in the reactivity series of metals.

Q41. You are given a solution of  $\text{AgNO}_3$ . Which of the following do you think cannot displace Ag from  $\text{AgNO}_3$  solution? 1 Mark

1. Magnesium.
2. Zinc.
3. Gold.
4. Copper.

**Ans:** 3. Gold.

**Explanation:**

Because gold is less reactive than silver. The other metals are more reactive than silver and can displace it from silver nitrate solution.

Q42. During the refining of an impure metal by electrolysis, the pure metal is deposited: 1 Mark

1. At cathode.
2. On the walls of electrolytic tank.
3. At anode.
4. At the bottom of electrolytic tank.

**Ans:** 1. At cathode.

**Explanation:**

In electrolytic refining, pure metal is always deposited at the cathode. The impure metal is made anode (positive terminal) and a thin rod of pure metal is made cathode (negative terminal). The salt of the metal is made electrolyte in the cell. When electricity passed through the cell, the impure metal dissolves in the electrolytic solution. The pure metal from the electrolytic solutions moves and gets deposited at the cathode.

Q43. Aluminium is used for making cooking utensils. Which of the following properties of aluminium are responsible for the same? 1 Mark

1. Good thermal conductivity.
2. Good electrical conductivity.
3. Ductility.
4. High melting point.

1. 1 and 2
2. 1 and 3



3. 2 and 3
4. 1 and 4

**Ans:** 4. 1 and 4

**Explanation:** Electrical conductivity and ductility have no relevance for a cooking utensil. These properties also do not enhance cooking.

Q44. What happens when calcium is treated with water?

1 Mark

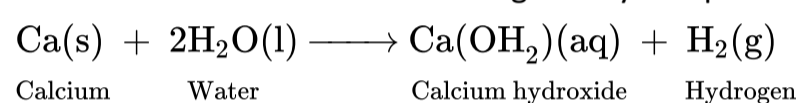
1. It does not react with water.
2. It reacts violently with water.
3. It reacts less violently with water.
4. Bubbles of hydrogen gas formed stick to the surface of calcium.

1. (i) and (iv)
2. (ii) and (iii)
3. (i) and (ii)
4. (iii) and (iv)

**Ans:** 4. (iii) and (iv)

**Explanation:**

Calcium metal reacts with water vigorously and produces calcium hydroxide and hydrogen gas.



In this reaction of calcium and water, bubbles of hydrogen gas are formed and get stuck to the surface of calcium metal because of which calcium starts floating.

Reaction of calcium with water is exothermic but heat produced in this reaction is not sufficient so that hydrogen can catch fire.

Q45. Generally, non-metals are not lustrous. Which of the following nonmetal is lustrous?

1 Mark

1. Sulphur.
2. Oxygen.
3. Nitrogen.
4. Iodine.

**Ans:** 4. Iodine.

**Explanation:** Iodine is lustrous.

Q46. The ability of metals to be drawn into thin wire is known as:

1 Mark

1. Ductility.
2. Malleability.
3. Sonorousity.
4. Conductivity.

**Ans:** 1. Ductility.

**Explanation:**

Ductility is one of the properties of metals which enable metals to be drawn into thin wires.

Q47. The number of protons in the nucleus of one atom of an element Y is 5. The symbol of ion formed by an atom of this element will be:

1 Mark

1.  $\text{Y}^{3-}$
2.  $\text{Y}^{2+}$
3.  $\text{Y}^{2-}$
4.  $\text{Y}^{3+}$

**Ans:** 4.  $\text{Y}^{3+}$

**Explanation:**

Number of protons is equal to number of electrons in an atom. Hence, electronic configuration of element Y is 2, 3. Thus, it becomes stabilised by donating its 3 electrons to form  $\text{Y}^{3+}$ .

Q48. Which one of the following figures correctly describes the process of electrolytic refining?

1 Mark

**Ans:**

**Explanation:**  $\text{Cu}^{2+}$  ions are released from anode by the oxidation of copper (Cu). These migrate towards cathode and are reduced to copper (Cu).

Q49. If copper is kept open in air, it slowly loses its shining brown surface and gains a green coating. It is due to the formation of: 1 Mark

1.  $\text{CuSO}_4$
2.  $\text{CuCO}_3$
3.  $\text{Cu}(\text{NO}_3)_2$
4.  $\text{CuO}$

**Ans:** 2.  $\text{CuCO}_3$

**Explanation:** When kept in open air, Copper reacts with oxygen to form copper oxide which appears as greenish layer.

Q50. Which of the following pair of reactants can undergo a displacement reaction under appropriate conditions? 1 Mark

1.  $\text{MgSO}_4 + \text{Fe}$ .
2.  $\text{ZnSO}_4 + \text{Fe}$ .
3.  $\text{MgSO}_4 + \text{Pb}$ .
4.  $\text{CuSO}_4 + \text{Fe}$ .

**Ans:** 4.  $\text{CuSO}_4 + \text{Fe}$ .

**Explanation:**

Iron (Fe) is a more reactive metal than copper, which can displace copper from copper sulphate.

Q51. The atomic number of an element X is 16. The symbol of ion formed by an atom of this element will be: 1 Mark

1.  $\text{X}^{2+}$
2.  $\text{X}^{3+}$
3.  $\text{X}^{2-}$
4.  $\text{X}^-$

**Ans:** 3.  $\text{X}^{2-}$

**Explanation:**

Element X needs 2 electrons to complete its octet. Therefore, it forms  $\text{X}^{2-}$  anion.

Q52. Out of aluminium, copper, calcium and tin, the most reactive metal is: 1 Mark

1. Aluminium.
2. Copper.
3. Tin.
4. Calcium.

**Ans:** 4. Calcium.

**Explanation:**

Calcium lies above the other three metals in reactivity series.

Q53. "Is malleable and ductile". This best describes: 1 Mark

1. A metal.
2. A compound.
3. A non-metal.
4. A solution.

**Ans:** 1. A metal.

**Explanation:**

Because malleability and ductility are the properties of metals.

Q54. A student prepared an aqueous solution of  $\text{CuSO}_4$  in beaker X and an aqueous solution of  $\text{FeSO}_4$  in beaker Y. He then dropped some iron pieces in beaker X and some zinc pieces in beaker Y. After about 10 hours he observed that the solutions in X and Y respectively appear: 1 Mark

1. Blue and green.
2. Colourless and pale green.

3. Colourless and light blue.
4. Greenish and colourless.

**Ans:** 4. Greenish and colourless.

Q55. An electrolytic cell consists of:

1 Mark

1. Positively charged cathode.
2. Negatively charged anode.
3. Positively charged anode.
4. Negatively charged cathode.

1. 1 and 2
2. 3 and 4
3. 1 and 3
4. 2 and 4

**Ans:** 2. 3 and 4

**Explanation:** Negative charged particles (anions) move towards anode; which shows anode is positively charged.

Q56. If the number of protons in one atom of an element Y is 20, then the number of electrons in its ion  $Y^{2+}$  will be:

1 Mark

1. 20
2. 19
3. 18
4. 16

**Ans:** 3. 18

**Explanation:**

Number of protons is equal to the number of electrons in an atom. It is given that an atom of an element Y contains 20 electrons.

Therefore, number of electrons in its ion  $Y^{2+}$  is  $18(20 - 2)$ .

Q57. Which of the following reactants are used to carry out the thermite reaction required for welding the broken railway tracks?

1 Mark

1.  $Al_2O_3 + Fe$ .
2.  $MnO_2 + Al$ .
3.  $Fe_2O_3 + Al$ .
4.  $Cu_2O + Fe$ .

**Ans:** 3.  $Fe_2O_3 + Al$ .

**Explanation:**

In this thermite reaction, iron (III) oxide and aluminium powder are combined and heated. Iron oxide gets reduced to iron by the action of reducing agent aluminium and produces excess heat. The molten iron produced is poured in the middle of the broken pieces of irons that are fixed mutually.

Q58. Calamine ore can be used to extract one of the following metals. This metal is:

1 Mark

1. Copper.
2. Mercury.
3. Aluminium.
4. Zinc.

**Ans:** 4. Zinc.

**Explanation:**

Calamine is an ore of zinc and its compound is zinc carbonate ( $ZnCO_3$ ).

Q59. Which of the following can undergo a chemical reaction?

1 Mark

1.  $MgSO_4 + Fe$ .
2.  $ZnSO_4 + Fe$ .
3.  $MgSO_4 + Pb$ .
4.  $CuSO_4 + Fe$ .

**Ans:** 4.  $CuSO_4 + Fe$ .

**Explanation:** Iron is more reactive than copper. Hence, iron displaces copper from copper sulphate solution.

Q60. The atomic numbers of four elements P, Q, R and S are 6, 10, 12 and 17 respectively. Which two elements can combine to form a covalent compound? 1 Mark

1. P and R
2. Q and S
3. P and S
4. R and S

**Ans:** 3. P and S

**Explanation:**

Element P needs 4 electrons to complete its octet. They can be shared with element S, which needs only 1 electron to complete its octet.

Q61. The electrons present in the valence shell of a noble gas atom can be: 1 Mark

1. 8 only.
2. 2 only.
3. 8 or 2.
4. 8 or 4.

**Ans:** 3. 8 or 2.

**Explanation:**

Helium is the only noble gas that has 2 electrons in its valence shell. Other noble gases have 8 electrons in their valence shells.

Q62. Out of the following oxides, the amphoteric oxide is: 1 Mark

1.  $\text{Fe}_2\text{O}_3$
2.  $\text{Al}_2\text{O}_3$
3.  $\text{P}_2\text{O}_5$
4.  $\text{N}_2\text{O}$

**Ans:** 2.  $\text{Al}_2\text{O}_3$

**Explanation:**

$\text{Al}_2\text{O}_3$  can react with acids as well as bases to form salt and water.

Q63. The atomic number of an element X is 19. The number of electrons in its ion  $\text{X}^+$  will be: 1 Mark

1. 18
2. 19
3. 20
4. 21

**Ans:** 1. 18

**Explanation:**

Because  $\text{X}^+$  ion contains one less electron than X.

Q64. Zinc blende ore can be converted into zinc oxide by the process of: 1 Mark

1. Roasting.
2. Hydrogenation.
3. Chlorination.
4. Calcination.

**Ans:** 1. Roasting.

**Explanation:**

Zinc blende (zinc sulphide or  $\text{ZnS}$ ) is a sulphide ore of zinc. Sulphide ores are converted to metal oxides by roasting (heating in the presence of air). When zinc blende is heated in the presence of surplus air, it is converted into zinc oxide.

Q65. An element is soft and can be cut with a knife. It is very reactive and cannot be kept open in the air. It reacts vigorously with water. The element is most likely to be: 1 Mark

1. Mg
2. S

3. P
4. Na

**Ans:** 4. Na

**Explanation:**

Na is soft and can be cut with a knife. It is very reactive and cannot be kept in open air. It reacts vigorously with water.

Q66. A basic oxide will be formed by the element:

1 Mark

1. K
2. S
3. P
4. Kr

**Ans:** 1. K

**Explanation:**

Because K is a metal, its oxide  $K_2O$  is a basic oxide.

Q67. A cleaned aluminium foil was placed in an aqueous solution of zinc sulphate. When the aluminium foil was taken out of the zinc sulphate solution after 15 minutes, its surface was found to be coated with a silvery grey deposit.

1 Mark

From the above observation it can be concluded that

1. Aluminium is more reactive than zinc.
2. Zinc is more reactive than aluminium.
3. Zinc and aluminium both are equally reactive.
4. Zinc and aluminium both are non-reactive.

**Ans:** 1. Aluminium is more reactive than zinc.

Q68. Which of the following metal exists in the liquid state?

1 Mark

1. Na
2. Ag
3. Cr
4. Hg

**Ans:** 4. Hg

**Explanation:**

Mercury (Hg) is the metal that exists in liquid state at room temperature.

Q69. Which of the following is an iron ore?

1 Mark

1. Cinnabar.
2. Calamine.
3. Haematite.
4. Rock salt.

**Ans:** 3. Haematite.

**Explanation:**

Haematite is an iron ore and the compound is iron (III) oxide ( $Fe_2O_3$ ).

Q70. In each test tubes A, B, C and D, 2mL of solution of  $Al_2(SO_4)_3$  in water was filled. Clean pieces of zinc were placed in test tube A, clean iron nail was put in test tube B, silver (Ag) was placed in test tube C and a clean copper wire was placed in test tube D.

1 Mark

Which of the following option (s) is/are correct about above experiment?

1. Zinc is more reactive than aluminium.
2. Copper is more reactive than aluminium.
3. Zinc is more reactive than copper.
4. Zinc, iron, silver and copper are less reactive than aluminium.

**Ans:** 4. Zinc, iron, silver and copper are less reactive than aluminium.

Q71. The two metals which are extracted by means of electrolytic reduction of their molten salts are:

1 Mark

1. Magnesium and manganese.
2. Iron and aluminium.
3. Zinc and magnesium.
4. Magnesium and aluminium.

**Ans:** 4. Magnesium and aluminium.

**Explanation:**

This is because magnesium and aluminium are highly reactive metals and are placed high in the reactivity series. This is also due to the fact that their oxides are very stable and cannot be reduced easily.

Q72. The metal which can be extracted from pyrolusite ore is:

1 Mark

1. Mercury.
2. Manganese.
3. Aluminium.
4. Magnesium.

**Ans:** 2. Manganese.

**Explanation:**

Manganese is extracted from its oxide ore, pyrolusite. The name of the compound in the ore is manganese dioxide having chemical formula  $\text{MnO}_2$ .

Q73. Which of the following methods is suitable for preventing an iron frying pan from rusting?

1 Mark

1. Applying grease
2. Applying paint
3. Applying a coating of zinc
4. All of the above.

**Ans:** 3. Applying coating of zinc.

Q74. The metal which is always present in an amalgam is:

1 Mark

1. Iron.
2. Aluminium.
3. Mercury.
4. Magnesium.

**Ans:** 3. Mercury.

**Explanation:**

An amalgam is an alloy of mercury with one or more metals. The combination of sodium with liquid mercury is called sodium amalgam. Amalgam of mercury with gold, silver or zinc is widely used for dental fillings.

Q75. The solution of one of the following compounds will not conduct electricity. This compounds is:

1 Mark

1.  $\text{NaCl}$
2.  $\text{CCl}_4$
3.  $\text{MgCl}_2$
4.  $\text{CaCl}_2$

**Ans:** 2.  $\text{CCl}_4$

**Explanation:**

Because it is a covalent compound.

Q76. During galvanisation, iron metal is given a thin coating of one of the following metals. This metal is:

1 Mark

1. Chromium.
2. Tin.
3. Zinc.
4. Copper.

**Ans:** 3. Zinc.

**Explanation:**

Galvanisation is a process that involves dipping of iron objects into melted zinc. This gives a thin coating of zinc layer on the iron object that protects it from corrosion. Zinc, being a highly reactive metal, forms a thin layer of zinc oxide, which prevents iron from getting exposed to the atmospheric air.

- Q77. Out of KCl, HCl, CCl<sub>4</sub> and NaCl, the compounds which are not ionic are: 1 Mark
1. KCl and HCl.
  2. HCl and CCl<sub>4</sub>.
  3. CCl<sub>4</sub> and NaCl.
  4. KCl and CCl<sub>4</sub>.

**Ans:** 2. HCl and CCl<sub>4</sub>.

**Explanation:**

Both these compounds are formed by sharing of electrons and hence, they form covalent bonds and not ionic bonds.

- Q78. Brass is an alloy of: 1 Mark
1. Cu and Sn.
  2. Cu and Pb.
  3. Pb and Sn.
  4. Zn and Cu.

**Ans:** 4. Zn and Cu.

**Explanation:**

Brass is an alloy of copper and zinc. It comprises of 80 percent copper and 20 percent zinc.

- Q79. The metals which can produce amphoteric oxides are: 1 Mark
1. Sodium and aluminium.
  2. Zinc and potassium.
  3. Calcium and sodium.
  4. Aluminium and zinc.

**Ans:** 4. Aluminium and zinc.

**Explanation:**

Both aluminium and zinc oxides react with acids and bases to form salt and water.

- Q80. An element X forms two oxides XO and XO<sub>2</sub>. The oxide XO is neutral but XO<sub>2</sub> is acidic in nature. The element X is most likely to be: 1 Mark
1. Sulphur.
  2. Carbon.
  3. Calcium.
  4. Hydrogen.

**Ans:** 2. Carbon.

**Explanation:**

Carbon forms two oxides, CO and CO<sub>2</sub>. The oxide CO is neutral and CO<sub>2</sub> is acidic in nature.

- Q81. Which one of the following four metals would be displaced from the solution of its salt by the other three metals? 1 Mark
1. Zn
  2. Ag
  3. Cu
  4. Mg

**Ans:** 2. Ag

**Explanation:**

Ag will be replaced from the solution of its salt by the other three metals.

- Q82. Which one of the following property is generally not exhibited by ionic compounds? 1 Mark
1. Solubility in water.
  2. Electrical conductivity in solid state.

3. High melting and boiling points.
4. Electrical conductivity in molten state.

**Ans:** 2. Electrical conductivity in solid state.

**Explanation:**

Because ionic compounds conduct electricity only in molten state or when dissolved in water to form aqueous solution.

Q83. The most abundant element in the earth crust is:

1 Mark

1. Silicon.
2. Oxygen.
3. Iron.
4. Aluminium.

**Ans:** 2. Oxygen.

**Explanation:**

The most abundant element in the Earth's crust is oxygen, making up 46.6%

Q84. The major ore of aluminium is known as:

1 Mark

1. Cinnabar.
2. Calamine.
3. Bauxite.
4. Pyrolusite.

**Ans:** 3. Bauxite.

**Explanation:**

Bauxite is one of the major ores of aluminium. Its compound is aluminium oxide ( $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ ).

Q85. A sulphide ore is converted into metal oxide by the process of:

1 Mark

1. Carbonation.
2. Roasting.
3. Calcination.
4. Anodising.

**Ans:** 2. Roasting.

**Explanation:**

Sulphide ores are transformed into oxides by the process of roasting. In this process, concentrated ore is heated in the presence of surplus air. Example: Zinc blende,  $\text{ZnS}$ , a sulphide ore of zinc, is roasted in the presence of air. On roasting, zinc sulphide gets transformed into zinc oxide.

Q86. Zinc oxide is a metal oxide. Which of the following term best describes the nature of zinc oxide:

1 Mark

1. An acidic oxide.
2. A basic oxide.
3. An amphoteric oxide.
4. A neutral oxide.

**Ans:** 3. An amphoteric oxide.

**Explanation:**

Zinc oxide can react with both acids and bases to form salt and water.

Q87. Which of the following has a triple bond as well as single bonds?

1 Mark

1. Ethene.
2. Methane.
3. Ethyne.
4. Nitrogen.

**Ans:** 3. Ethyne.

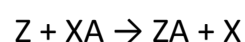
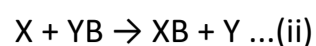
**Explanation:**

An ethyne molecule ( $\text{H} - \text{C} \equiv \text{C} - \text{H}$ ) contains a triple bond between two carbon atoms and two single bonds between carbon and hydrogen atoms.



Q88. On the basis of the sequence of the given reactions identify the most and least reactive elements:

1 Mark



1. X and Z
2. Y and Z
3. Z and X
4. Z and Y

**Ans:** 4. Z and Y

Q89. The elements whose oxides can turn litmus solution red are:

1 Mark

1. Lithium and sodium.
2. Copper and potassium.
3. Carbon and hydrogen.
4. Phosphorus and sulphur.

**Ans:** 4. Phosphorus and sulphur.

**Explanation:**

Phosphorus and sulphur are non-metals whose oxides are acidic in nature. These oxides turn blue litmus solution to red.

Q90. Which of the following property is generally not shown by metals?

1 Mark

1. Electrical conduction.
2. Sonorous in nature.
3. Dullness.
4. Ductility.

**Ans:** 3. Dullness.

**Explanation:**

Metals have shiny appearance and not dull. Thus property of dullness is not shown by metals.

Q91. Which of the following pair of metals exists in their native state in nature?

1 Mark

1. Ag and Hg.
2. Ag and Zn.
3. Au and Hg.
4. Au and Ag.

**Ans:** 4. Au and Ag.

**Explanation:**

Gold (Au) and silver (Ag) are highly non-reactive. Hence, they are available in native state in nature and do not react with oxygen or any other element in the atmosphere.

Q92. Which of the following metals exist in their native state in nature?

1 Mark

1. Cu
  2. Au
  3. Zn
  4. Ag
- 
1. 1 and 2
  2. 2 and 3
  3. 2 and 4
  4. 3 and 4

**Ans:** 3. 2 and 4

**Explanation:** Gold and silver (Au and Ag) are also known as Noble metals as they are less reactive and exist in their native state in nature.

Q93. Which of the following alloys contains mercury as one of the constituents?

1 Mark

1. Stainless steel.

2. Solder.
3. Duralumin.
4. Zinc amalgam.

**Ans:** 4. Zinc amalgam.

**Explanation:**

Generally, alloys containing mercury as one of its constituents are known as amalgam. Zinc amalgam is an alloy of zinc and liquid mercury.

Q94. The electronic configurations of three elements X, Y and Z are:

1 Mark

X : 2

Y : 2, 8, 7

Z : 2, 8, 2

Which of the following is correct regarding these elements?

1. X is a metal.
2. Y is a metal.
3. Z is a non-metal.
4. Y is a non-metal and Z is a metal.

**Ans:** 4. Y is a non-metal and Z is a metal.

**Explanation:**

Element Y has 1 less electron to complete its octet which is a property of non-metals. On the other hand, element Z has 2 extra electrons to become stabilised which is a property of metals.

Q95. A common metal which is highly resistant to corrosion is:

1 Mark

1. Iron.
2. Copper.
3. Aluminium.
4. Magnesium.

**Ans:** 3. Aluminium.

**Explanation:**

Aluminium is resistant to corrosion due to the formation of a thin oxide layer (aluminium oxide or  $\text{Al}_2\text{O}_3$ ). This prevents further corrosion by creating a strong protective layer over the surface of the metal.

Q96. An element X reacts with hydrogen, when heated, to form a covalent hydride  $\text{H}_2\text{X}$ . If  $\text{H}_2\text{X}$  has a smell of rotten eggs, the element X is likely to be:

1 Mark

1. Carbon.
2. Sulphur.
3. Chlorine.
4. Phosphorus.

**Ans:** 2. Sulphur.

**Explanation:**

Because sulphur reacts with hydrogen to form a covalent hydride,  $\text{H}_2\text{S}$  that has the smell of rotten eggs.

Q97. The elements whose oxides can turn litmus solution blue are:

1 Mark

1. Carbon and sulphur.
2. Sodium and carbon.
3. Potassium and magnesium.
4. Magnesium and sulphur.

**Ans:** 3. Potassium and magnesium.

**Explanation:**

Potassium and magnesium are metals whose oxides are basic in nature. These oxides turn red litmus solution to blue.

Q98. One of the following contains a double bond as well as single bonds. This is:

1 Mark

1.  $\text{CO}_2$
2.  $\text{O}_2$

3. C<sub>2</sub>H<sub>4</sub>

4. C<sub>2</sub>H<sub>2</sub>

**Ans:** 3. C<sub>2</sub>H<sub>4</sub>

**Explanation:**

An ethene molecule (C<sub>2</sub>H<sub>4</sub>) contains one double bond between two carbon atoms and four single bonds between carbon and hydrogen atoms.

Q99. An element E reacts with water to form a solution which turns phenolphthalein solution pink. The element E is most likely to be: 1 Mark

1. S

2. Ca

3. C

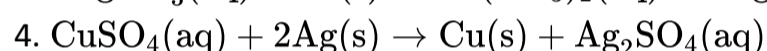
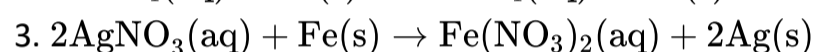
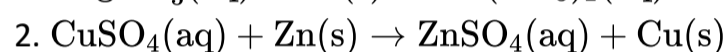
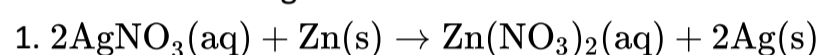
4. Ag

**Ans:** 2. Ca

**Explanation:**

Calcium is the metal that can react with water to form calcium hydroxide, which is basic in nature. Hence it turns phenolphthalein solution pink.

Q100. Which of the following reactions not occur? 1 Mark



**Ans:** 4.  $\text{CuSO}_4(\text{aq}) + 2\text{Ag}(\text{s}) \rightarrow \text{Cu}(\text{s}) + \text{Ag}_2\text{SO}_4(\text{aq})$

Q101. The rechargeable battery used in a mobile phone hand set is usually: 1 Mark

1. Lead ion battery.

2. Sodium ion battery.

3. Hydrogen ion battery.

4. Lithium ion battery.

**Ans:** 4. Lithium ion battery.

**Explanation:**

Because lithium ion is a good conductor of electricity.

Q102. Food cans are coated with tin and not with zinc because. 1 Mark

1. Zinc is costlier than tin.

2. Zinc has a higher melting point than tin.

3. Zinc is more reactive than tin.

4. Zinc is less reactive than tin.

**Ans:** 3. Zinc is more reactive than tin.

Q103. Rock salt is an ore of one of the following metals. This metal is: 1 Mark

1. Mn

2. Na

3. Fe

4. Cu

**Ans:** 2. Na.

**Explanation:**

Rock salt is a chloride ore of sodium. The name of the compound in the ore is sodium chloride with chemical formula NaCl.

Q104. The metal which can be extracted simply by heating the cinnabar ore in air is: 1 Mark

1. Zn

2. Cu

3. Al
4. Hg

**Ans:** 4. Hg

**Explanation:**

Mercury is a low reactive metal. Thus, it can be extracted from its ore cinnabar, HgS, by heating it in air.

Q105. Electrical wires have a coating of an insulating activity material. The material, generally used is:

1 Mark

1. Sulphur.
2. Graphite.
3. PVC.
4. All can be used.

**Ans:** 3. PVC.

**Explanation:**

PVC is a polymer and bad conductor of electricity. It is used as insulating material for covering electric wires. Graphite is good conductor of electricity, so cannot be used as insulating material. Sulphur, which is a non-metal although non-conductor of electricity but brittle in nature. So, cannot be used as insulating material.

Q106. Which of the following metals can be obtained from haematite ore?

1 Mark

1. Copper.
2. Sodium.
3. Zinc.
4. Iron.

**Ans:** 4. Iron.

**Explanation:**

Iron can be obtained from hematite ore. Hematite ore contains the compound iron (III) oxide ( $\text{Fe}_2\text{O}_3$ ).

Q107. Calamine ore can be converted into zinc oxide by the process of:

1 Mark

1. Dehydration.
2. Roasting.
3. Calcination.
4. Sulphonation.

**Ans:** 3. Calcination.

**Explanation:**

Calamine ( $\text{ZnCO}_3$ , zinc carbonate) is a carbonate ore of zinc. Carbonate ores are converted to metal oxides by calcination (heating in the absence of air). When calamine ore (zinc carbonate) is heated in the absence of air, it is converted into zinc oxide.

Q108. A covalent molecule having a double bond between its atoms is:

1 Mark

1. Hydrogen.
2. Oxygen.
3. Water.
4. Ammonia.

**Ans:** 2. Oxygen.

**Explanation:**

In an oxygen molecule, each oxygen atom shares its 2 electrons to complete its octet and forms double covalent bond between them.

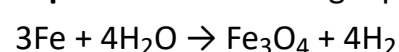
Q109. Which of the following oxide(s) of iron would be obtained on prolonged reaction of iron with steam?

1 Mark

1. FeO
2.  $\text{Fe}_2\text{O}_3$
3.  $\text{Fe}_3\text{O}_4$
4.  $\text{Fe}_2\text{O}_3$  and  $\text{Fe}_3\text{O}_4$

**Ans:** 3.  $\text{Fe}_3\text{O}_4$

**Explanation:** Following equation shows the reaction between iron and steam.



Q110. An ore of manganese metal is:

1 Mark

1. Bauxite.
2. Haematite.
3. Cuprite.
4. Pyrolusite.

**Ans:** 4. Pyrolusite.

**Explanation:**

Pyrolusite is an ore of manganese and the compound is manganese dioxide ( $\text{MnO}_2$ ).

Q111. Metals are refined by using different methods. Which of the following metals are refined by electrolytic refining?

1 Mark

1. Au
  2. Cu
  3. Na
  4. K
- 
1. 1 and 2
  2. 1 and 3
  3. 2 and 3
  4. 2 and 4

**Ans:** 1. 1 and 2

**Explanation:** Alkali metals are very reactive so cannot refine with the help of electrolytic refining process.

Electrolytic refining is used for metals like Cu, Zn, Ag, Au etc. The method to be used for refining an impure metal depends on the nature of the metals well as on the nature of impurities present in it. So, metals Au (gold) and Cu (copper) are refined by electrolytic refining.

Q112. The two metals which can be extracted just by heating their sulphides in air are:

1 Mark

1. Sodium and copper.
2. Copper and aluminium.
3. Potassium and zinc.
4. Mercury and copper.

**Ans:** 4. Mercury and copper.

**Explanation:**

Both mercury and copper are less reactive metals and are placed low in the reactivity series. Hence, they can be extracted by heating their sulphides in air and further reducing their oxides by heating.

Q113. Element X reacts with element Y to form a compound Z. During the formation of compound Z, atoms of X lose one electron each whereas atoms of Y gain one electron each. Which of the following property is not shown by compound Z?

1 Mark

1. High melting point.
2. Low melting point.
3. Occurrence as solid.
4. Conduction of electricity in molten state.

**Ans:** 2. Low melting point.

**Explanation:**

Compound Z is an ionic compound formed by transfer of electrons. Ionic compounds have high melting points.

Q114. Which of the following pairs will give displacement reactions?

1 Mark

1. NaCl solution and copper metal.
2.  $\text{MgCl}_2$  solution and aluminium metal.
3.  $\text{FeSO}_4$  solution and silver metal.
4.  $\text{AgNO}_3$  solution and copper metal.

**Ans:** 4.  $\text{AgNO}_3$  solution and copper metal.

Q115. Acetic acid reacts with solid sodium hydrogen carbonate:

1 Mark

1. Slowly forming no gas.
2. Vigorously with effervescence.
3. Slowly without effervescence.
4. Vigorously without gas formation.

**Ans:** 2. Vigorously with effervescence.

**Explanation:**

When acetic acid reacts with sodium hydrogen carbonates then brisk effervescence are observed. These effervescence are evolved due to the release of carbon dioxide from sodium hydrogen carbonate.

Q116. Silver articles become black on prolonged exposure to air. This is due to the formation of:

1 Mark

1.  $\text{Ag}_3\text{N}$
2.  $\text{Ag}_2\text{O}$
3.  $\text{Ag}_2\text{S}$
4.  $\text{Ag}_2\text{S}$  and  $\text{Ag}_3\text{N}$

**Ans:** 3.  $\text{Ag}_2\text{S}$

**Explanation:** Air contains traces of hydrogen sulphide ( $\text{H}_2\text{S}$ ) gas which reacts with silver ( $\text{Ag}$ ) to form  $\text{Ag}_2\text{S}$  black in colour.

Q117. Generally, metals are solid in nature. Which one of the following metals is found in liquid state at room temperature?

1 Mark

1. Na
2. Fe
3. Cr
4. Hg

**Ans:** 4. Hg

**Explanation:** Mercury (Hg) is a liquid at room temperature.

Q118. E is an element that's ore is rich in  $\text{E}_2\text{O}_3$ .  $\text{E}_2\text{O}_3$  is not affected by water. It forms two chlorides,  $\text{ECl}_2$  and  $\text{ECl}_3$ . The element E is:

1 Mark

1. Copper.
2. Zinc.
3. Aluminium.
4. Iron.

**Ans:** 4. Iron.

Q119. Generally metals react with acids to give salt and hydrogen gas. Which of the following acids does not give hydrogen gas on reacting with metals (except Mn and Mg)?

1 Mark

1.  $\text{H}_2\text{SO}_4$
2. HCl
3.  $\text{HNO}_3$
4. All of these.

**Ans:** 3.  $\text{HNO}_3$

**Explanation:**  $\text{HNO}_3$  is a strong oxidising agent. It oxidises metals to metal oxides and then to metal nitrates and itself is reduced to either nitric oxide (NO), nitrous oxide ( $\text{N}_2\text{O}$ ) or nitrogen dioxide ( $\text{NO}_2$ ). However, both Mg and Mn evolve hydrogen on reacting with the acid.

Q120. Which of the following is an ore of mercury metal?

1 Mark

1. Rock salt.
2. Cinnabar.
3. Calamine.
4. Haematite.

**Ans:** 2. Cinnabar.

**Explanation:**

Cinnabar is an important ore of mercury. Its compound is mercury (II) sulphide ( $\text{HgS}$ ).

Q121. In stainless steel alloy, iron metal is mixed with:

1 Mark

1. Cu and Cr
2. Cr and Ni
3. Cr and Sn
4. Cu and Ni

**Ans:** 2. Cr and Ni

**Explanation:**

Stainless steel is an alloy of iron, chromium and nickel. It is extremely strong and tough and does not corrode at all.

Q122. During electrolytic refining of zinc, it gets:

1 Mark

1. Deposited on cathode.
2. Deposited on anode.
3. Deposited on cathode as well as anode.
4. Remains in the solution.

**Ans:** 1. Deposited on cathode.

**Explanation:** Zinc is positively charged and hence is deposited at negatively charged cathode.

Q123. The noble gas having only two electrons in its valence shell is:

1 Mark

1. Ar
2. Ne
3. He
4. Kr

**Ans:** 3. He

**Explanation:**

Atomic number of helium is 2. It contains 2 electrons in its atom.

Q124. Which of the following non-metal is a liquid?

1 Mark

1. Carbon.
2. Sulphur.
3. Bromine.
4. Iodine.

**Ans:** 3. Bromine.

**Explanation:**

Bromine is the non-metal that is a liquid.

Q125. The number of protons in one atom of an element X is 8. What will be the number of electrons in its ion  $X^{2-}$ ?

1 Mark

1. 8
2. 9
3. 10
4. 11

**Ans:** 3. 10

**Explanation:**

Number of protons is equal to the number of electrons in an atom. It is given that one atom of an element X contains 8 electrons.

Therefore, number of electrons in its ion  $X^{2-} = 10 + 2 = 12$

Q126. An important ore of zinc metal is:

1 Mark

1. Calamine.
2. Cuprite.
3. Hyrolusite.
4. Haematite.

**Ans:** 1. Calamine.

**Explanation:**

Calamine is an ore of zinc and the compound is zinc carbonate ( $\text{ZnCO}_3$ ).

Q127. Which of the following metals are obtained by electrolysis of their chlorides in molten state?

1 Mark

1. Na
  2. Ca
  3. Fe
  4. Cu
- 
1. 1 and 4
  2. 3 and 4
  3. 1 and 3
  4. 1 and 2

**Ans:** 4. 1 and 2

**Explanation:** Usually alkali and alkaline earth metals can be extracted by electrolysis of their salts in molten state.

Q128. Stainless steel is very useful material for our life. In stainless steel, iron is mixed with:

1 Mark

1. Ni and Cr.
2. Cu and Cr.
3. Ni and Cu.
4. Cu and Au.

**Ans:** 1. Ni and Cr.

**Explanation:** Stainless steels are formed with the addition of high proportion of chromium and nickel to iron.

Q129. The atomic numbers of four elements A, B, C and D are 6, 8, 10 and 12 respectively. The two elements which can react to form ionic bonds (or ionic compound) are:

1 Mark

1. A and D
2. B and C
3. A and C
4. B and D

**Ans:** 4. B and D

**Explanation:**

Element B has the electronic configuration of 2, 6. It requires 2 electrons to complete its octet. On the other hand, element D has the electronic configuration of 2, 8, 2. It requires to release 2 electrons to complete its octet.

Thus, both atoms react to form ionic bonds by transfer of electrons.

Q130. Beakers A, B and C contain zinc sulphate, silver nitrate and iron (II) sulphate solutions respectively. Copper pieces are added to each beaker. Blue colour will appear in case of:

1 Mark

1. Beaker A
2. Beaker B
3. Beaker C
4. All the beakers.

**Ans:** 2. Beaker B