CHEMISTRY

BOOKS - TARGET CHEMISTRY (HINGLISH)

METALLURGY

Choose The Correct Alternative

1. ___ metal has the highest melting point.

A. Gold

B. Tungsten

C. Platinum

D. Iron

Answer: B

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2. The soft metal which can be cut with knife is

_____

A. sodium

B. aluminium

C. copper

D. silver

Answer: A

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3. Name the hardest natural substance known

A. diamond

B. aluminium

C. graphite

D. silver

Answer: A

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4. What is the colour of the flame when copper metal is burned on the flame?

A. Orangish red

B. Bluish green

C. Yellow

D. Brown

Answer: B

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5. 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.

A. Mg

B. Na

C. Al

D. Ca

Answer: B

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6. What will you observe when calcium is treated with water?

A. It reacts violently with water.

B. It reacts slowly to form calcium oxide.

C. Bubbles of hydrogen gas are formed which stick to the surface of calcium

D. It does not react with water.

Answer: C

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7. Which of the following metals, does not react with cold or hot water but reacts with steam?

A. Potassium

B. Calcium

C. Magnesium

D. Iron

Answer: D

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8. The CORRECT increasing order of reactivity of metals is ___

A. Mg lt Al lt Zn lt Fe

B. Al lt Zn lt Fe lt Mg

C. Fe lt Zn lt Al lt Mg

D. Zn lt Mg lt Fe lt Al

Answer: C

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9. Priyanka introduced an iron nail in a test-tube containing freshly prepared copper sulphate solution. What would she observe?

A. The blue colour of the solution changed to green

B. The green colour of the solution changed to blue.

C. The solution becomes colourless

D. The colour of the solution did not change

Answer: A

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10. When a copper strip is kept immersed in free prepared ferrous sulphate solution taken test-tube, ____

A. the blue colour of the solution change green

B. the green colour of the solution change to blue

C. the solution becomes colourless

D. the colour of the solution does not change

Answer: D

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11. In which of the following pairs will till displacement reaction occur?

A. $ZnSO_4$ solution and copper metal

B. $FeSO_4$ solution and silver metal

C. $FeSO_4$ solution and copper metal

D. $CuSO_4$ solution and iron metal

Answer: D

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12. When an alwninium strip is immersed into ZnSO solution, the colour of the solution _____

A. remains the same

B. turns light green

C. turns light blue

D. turns yellow

Answer: A

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13. Iron is _____

A. more reactive than zinc

B. more reactive than aluminium

C. less reactive than copper

D. less reactive than aluminium

Answer: D

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14. Which of the following is not an ionic compound?

A. H_2O

B. $MgCl_2$

C. MgO

D. NaBr

Answer: A

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15. Aluminium oxide is ___ in nature.

A. acidic

B. basic

C. amphoteric

D. neutral

Answer: C

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16. The greenish layer formed over the surface of copper vessels is of _____

A. copper carbonate

B. copper sulphide

C. copper oxide

D. copper chloride

Answer: A

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17. When a corroded copper article is dipped in silver nitrate solution, ____

A. nitrate gets deposited on the article

B. silver gets deposited on the article

C. there is no change

D. the corrosion on the article increases

Answer: B

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Complete The Paragraph

1. Select the appropriate options and complete the following paragraph.

(ores, gangue, metallurgy, free, electrolysis, minerals, combined, copper, iron, platinum)

Based on their reactivity, most of the metals are found in ___ state in the earth's crust while some metals such as silver, gold and are found in free state. The compounds of metals which occur naturally in the earth's crust are known as ___ . The minerals from which metals can be profitably extracted are called ___ . Ores mined from earth usually contain large amount of impurities like sand , soil , etc. These impurities are called ___ . The extraction of metals from their ores and then refining them for use is known as _____

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Name The Following

1. A nonmetal which is in liquid state at room temperature .

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2. The nonmetal which has metallic luster

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3. The nonmetal having elecrtrical conductivity

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4. The nonmetal which is bad conductor of electricity but good conductor of heat

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5. The compound formed on burning magnesium ribbon in air

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6. The oxide that forms salt and water by reacting with both acid and base

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7. The reagent that dissolves noble metals.

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8. The device used for grinding an ore.

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9. The method to extract silver from its ore

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10. An ore of aluminium is

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11. Write the chemical formula of cryolite

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12. Alloy of sodium with mercury.

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True Or False

1. Bromine is a nonmetal which exists in liquid state.

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2. Magnesium burns in air with a dazzling white flame

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3. Lead is more reactive than iron.

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4. Nonmetals attain stable noble gas configuration by losing electrons

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5. Hydraulic separation method is based on the law of gravitation

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6. Cassiterite mainly contains the nonmagnetic ingredient, $FeWO_4$ and the magnetic ingredient, SnO_2.

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7. Magnetic separation method is used to concentration zinc blende ore

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8. Aluminium is the third highly abundant element in the earth crust after oxygen and silicon.

9. In Bayer's process, bauxite ore is leached by aqueous sodium carbonate solution

10. In calcination, carbonate ores are heated in a limited supply of air

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11. A greenish layer is formed on silver articles due to reaction of silver with hydrogen sulphide in air.

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12. Ornaments are plated with gold using anodizing process.

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Odd One Out

1. Sodium, mercury, lead, chlorine

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2. Nitrogen, oxygen, fluorine, helium

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3. Calcium oxide, magnesium oxide, lithium oxide, zinc oxide

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4. Tinning, anodization, alloying, froth floatation

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5. Chromium, copper, stainless steel, iron

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Complete The Analogy

1. Zinc blende : ZnS :: Copper pyrite : _____

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2. Bayer's process : Caustic soda :: Hall's process : _____

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3. Concentration of carbonate ores : Calcination :: Concentration of sulphide ores : _____

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4. A metal is coated with its oxide : Anodizing :: A less reactive metal is coated on a more reactive metal : _____

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5. Stainless steel : Iron, chromium and carbon :: Bronze : _____

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Match The Following

1. Make pairs of substances and their properties

	Substance		Property
i.	Potassium bromide	a.	Combustible
ii.	Gold	b.	Soluble in water
iii.	Sulphur	c.	No chemical reaction
iv.	Neon	d.	High ductility

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2. Identify the pairs of metals and their ores from the following

	Group 'A'		Group 'B'
i.	Bauxite	a.	Mercury
ii.	Cassiterite	b.	Aluminium
iii.	Cinnabar	c.	Tin

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3. Match the metals to the methods by which they are extracted .

	Metal		Method
i.	Zinc	a.	Reduction with aluminium
ii.	Aluminium	b.	Reduction by heating in air
iii.	Manganese	c.	Electrolytic reduction
iv.	Mercury	d.	Reduction with carbon

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4. Match the following

	Column I		Column II
i.	Fluorspar	a.	SiO_2
ii.	Silica	b.	Na_3AlF_6
iii.		c.	CaF_2

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Answer The Following

1. Give examples of any two metals which exist as liquid under the normal condition

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2. What are the physical properties of metals and nonmetals?

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3. Explain the terms malleable and ductile with examples.

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4. Name two allotropes of carbon

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5. Out of sodium and sulphur, which is a metal ? Explain its reaction with oxygen. Give balanced reaction.

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6. Name two metals which react violently with cold water. Write any four observations you would make when such a metal is dropped into water.

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7. why are metals called electropositive elements whereas non-metals are called electronegative elements?

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8. Are all the metals equally reactive?

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9. What is aqua regia? How is it prepared?

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10. Arrange the following metals in the order of their decreasing reactivity: Aluminium, gold,

sodium, copper

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11. Divide the metals Cu, Zn, Ca, Mg, Fe, Na, Li into three groups, namely reactive metals, moderately reactive metals and less reactive metals.

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12. Which metal is more reactive, copper or iron?

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13. Name one metal which can displace hydrogen from dilute acids and one metal which cannot.

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14. What would you observe when zinc is added to a solution of iron (II) sulphate? Write the chemical reaction that takes place.

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15. A solution of ferrous sulphate was kept in an aluminium can was found to have a number of holes in it. After few days, the can Explain the observation and write the chemical equation involved.

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16. When a copper coin is dipped in silver nitrate solution, a glitter appears on the coin after some time. Why does this happen? Write the chemical equation.

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17. Why cannot each metal react to its own salt?

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18. The electronic configuration of metal 'A' is 2, 8, 1 and that of metal 'B' is 2, 8, 2. Which of the two metals is more reactive? Write their reactions with dilute hydrochloric acid.

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19. A nonmetal 'X' is an important constituent of all living organisms and it forms two oxides Y and Z which are gases. Y is toxic while Z is

responsible for global warming. Identify X, Y and Z.

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20. In the reaction between chlorine and HBr, a transformation of HBr into Br_2 takes place. Can this transformation be called oxidation? Which is the oxidant that brings about this oxidation?

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21. State two important factors responsible for a certain crystal structure in ionic compounds

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22. Explain the general properties of ionic compounds

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23. Why are ionic compounds solid and hard at room temperature?

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24. Name two metals which are found in nature in the free state.

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25. Aluminium occurs in the combined state while gold does not. Why ?

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26. Explain the Metallurgy .

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27. Explain the Ores.

Watch Video Solution

28. Explain the terms :

Minerals

Watch Video Solution

29. Explain the Gangue .

Watch Video Solution

30. Write a short note on concentration of ores.

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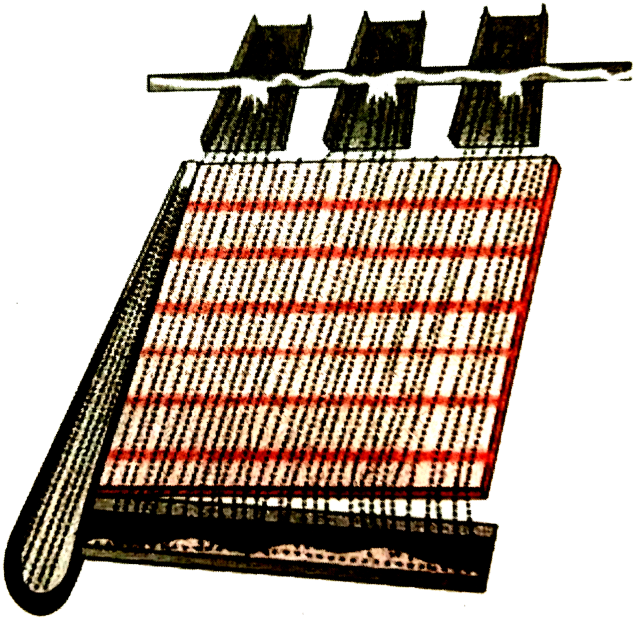
31. Label the diagram given below and explain it



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32. Explain hydraulic separation method with neat and labelled diagram

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33. A tapping vessel opens in a tank like container that is tapering on the lower side. The tank has an outlet for water on the upper side and a water inlet on the lower side. Finely ground ore is released in the tank. A forceful jet of water is introduced in the tank from lower side and gangue particles and pure ore are separated by this method.

i. The above description is of which gravitation separation method?

ii. Draw labelled diagram of this method.

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34. Describe magnetic separation method with the help of labelled diagram. Also explain how cassiterite ore is concentrated by this method.

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35. With neat and labelled diagram, explain froth floatation method.

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36. What is the difference between magnetic separation method and froth floatation method?

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37. Write a short note on leaching.

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38. What chemical process is used for obtaining a metal from its oxide?

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39. Explain oxidation and reduction according to electronic conccept .Give two expamples.

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40. Explain giving one example, how highly reactive metals (which are high up in the reactivity series) are extracted.

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41. Give four examples of highly reactive metals.

Watch Video Solution

42. Write the electrode reaction for electrolysis of molten magnesium chloride and calcium chloride

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43. Describe Bayer's process for concentration of bauxite ore.

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44. Explain Hall's process used for concentration of bauxite ore.

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45. Describe the electrolytic reduction of alumina with neat labelled diagram

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46. Complete the following statement using every given options.

During the extraction of aluminium _____

A. Ingredients of gangue and bauxite.

B. Use of leaching during the concentration of ore.

C. Chemical reaction of transformation of bauxite into alumina by Hall's process.

D. Heating the aluminium ore with concentrated caustic soda.

Answer:

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47. What are the moderately reactive metals?

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48. In which form do the moderately reactive metals occur in nature?

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49. Why should the metal sulphides and carbonates be converted to metal oxides in the process of extraction of metal from them?

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50. Mention the steps carried out for the extraction of zinc from its carbonate ore. Write the chemical reactions involved.

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51. Giving examples differentiate between roasting and calcination.

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52. Give any four examples of moderately reactive metals.

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53. $3MnO_2 + 4Al \rightarrow 3Mn + 2Al_2O_3$ + Heat

Identify the substances undergone oxidation and reduction in this reaction

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54. What is a thermite reaction? Explain with the help of an equation.state one use of this reaction.

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55. How is copper metal extracted from its sulphide ore ?

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56. Draw a concept map to show the steps to extract metals of medium and low reactivity from their sulphide ores

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57. State the difference between highly reactive metals and less reactive metals.

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58. Give two examples of less reactive metals

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59. REFINING OF METALS

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60. Why do new iron sheets appear shiny?

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61. What is galvanization? What purpose is served by it?

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62. Write a short note on: Tinning

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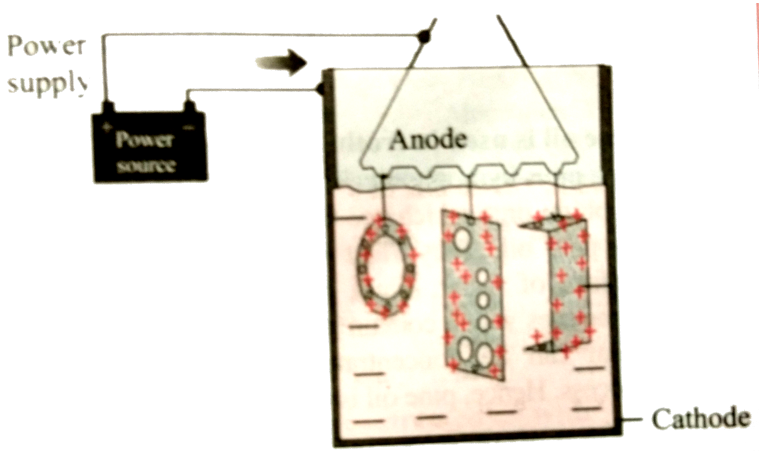
63. Write a note based on the diagram given below.



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64. What is electroplating ?

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65. In two methods of control of corrosion of aluminium, either a layer of aluminium oxide is formed or a silver plating is done on the surface. State to which electrode the aluminium article is attached in these methods respectively

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66. What is an alloy ? Give two examples of alloys

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67. Alloys are prepared by mixing a metal with other metals or nonmetals in certain proportion. The properties of the main metal change when the metal is alloyed.

i. How do the properties of iron change when carbon and chromium are mixed with it?

ii. How do the properties of copper change when tin is mixed with it?

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68. Give examples of alloys containing mercury.

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69. Give uses of alloys containing mercury

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Give Reasons

1. Electric wires are covered with rubber like material.

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2. Why are metals good conductors of electricity while non-metals are not ?

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3. Sodium is always kept in kerosine.

Give reason

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4. Calcium floats on water during the reaction with water.

Give reason

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5. Metals like copper fail to evolve hydrogen gas on reacting with dilute nitric acid.

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6. Generally the ionic' compounds have high melting points.

Give reason

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7. Explain why, a salt which does not conduct electricity in the solid state becomes a good conductor in molten state.

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8. Pine oil is generally added in the froth floatation process. Explain.

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9. During the electrolytic production of aluminium , the carbon anodes are replaced from time to time because

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10. Explain why the surfaces of some metals become dull when exposed to air for sometime.

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11. Lemon or tamarind is used for cleaning copper vessels turned greenish.

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Give Balanced Chemical Equation

1. Sodium oxide dissolves in water.

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2. Steam is passed over aluminium. Give balanced reaction.

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3. Explain the following reactions giving their balanced chemical equations :

Steam is passed over iron.

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4. Magnesium is treated with dilute hydrochloric acid.

 Watch Video Solution

5. Zinc is treated with dilute hydrochloric acid.

 Watch Video Solution

6. Iron reacts with dilute hydrochloric acid.

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7. Give balanced chemical equations for the following chemical reaction.

Chlorine dissolves in water

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8. Give balanced chemical equations for the following chemical reaction.

Chlorine reacts with dilule hydrobromic acid.

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9. Write chemical equation for the following events.

Aluminium came in contact with air.

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10. Write chemical equation for the following events.

Iron filings are dropped in aqueous solution of copper sulphate.

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11. Write chemical equation for the following events.

A reaction was brought about between ferric oxide and aluminium.

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12. Write chemical equation for the following events.

Electrolysis of alumina is done.

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13. Zinc oxide is dissolved in dilute hyrochloric acid, Give balanced reaction.

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Distinguish Between

1. Differentiate between metal and non-metal on the basis of their chemical properties.

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2. Calcination and roasting

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Complete The Given Chart Table

1. Complete the following table using a mark 'right' if the reaction occurs and 'wrong' for no

reaction.

Metal	Ferrous sulphate	Copper sulphate	Zinc sulphate	Silver nitrate
Cu				
Ag				
Al				
Pb				

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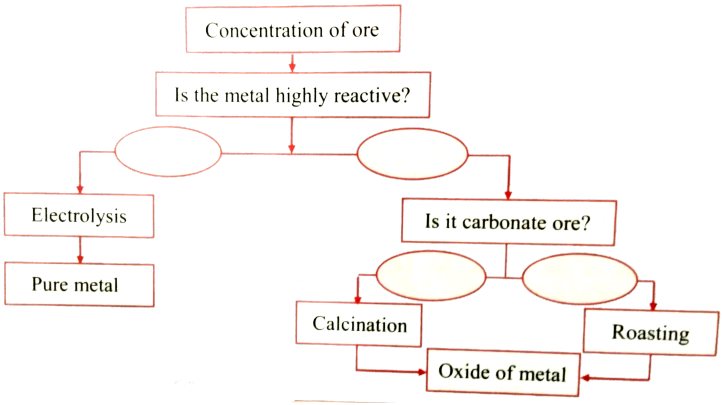
2. You are given an ore which is either carbonate or sulphide ore of a metal which lies in the middle of the reactivity series. Complete the following flow chart with 'Yes' or

'No'



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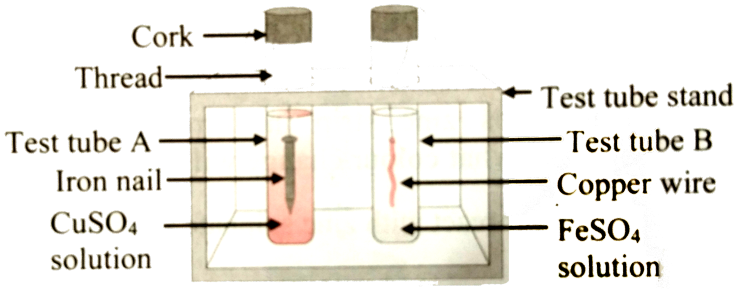
Question Based On Diagram

1. Study the following experimental set-up and answer the following questions.



What changes will you observe in test tube A?

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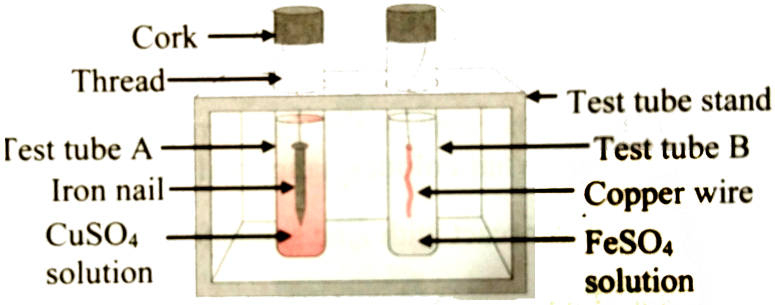
2. Study the following experimental set-up and answer the following questions.



What do you think will happen in test tube B?

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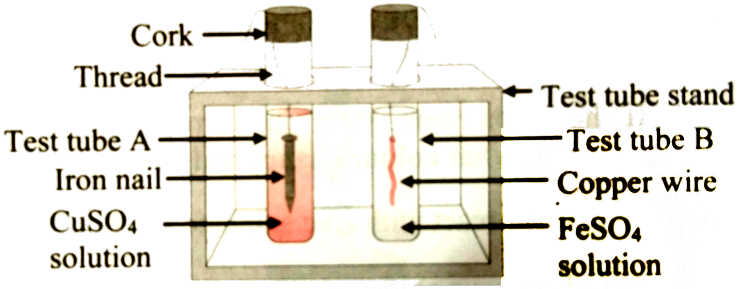
3. Study the following experimental set-up and answer the following questions.



What will happen if copper sulphate solution in test tube A is replaced by magnesium nitrate solution?

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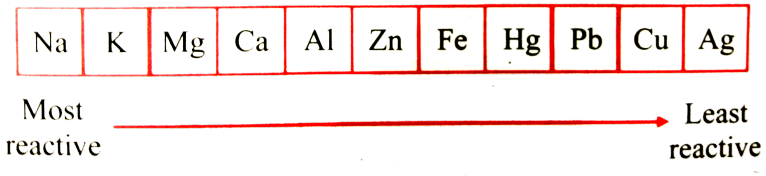
4. In the given reactivity series, some metals are misplaced. Rearrange these metals in the decreasing order of their reactivity.



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5. Draw a neat and labelled diagram

Magnetic separation method

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6. Draw a neat and labelled diagram

Froth floatation method

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7. Draw a neat and labelled diagram

Electrolytic reduction of alumina

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8. Draw a neat and labelled diagram

Hydraulic separation

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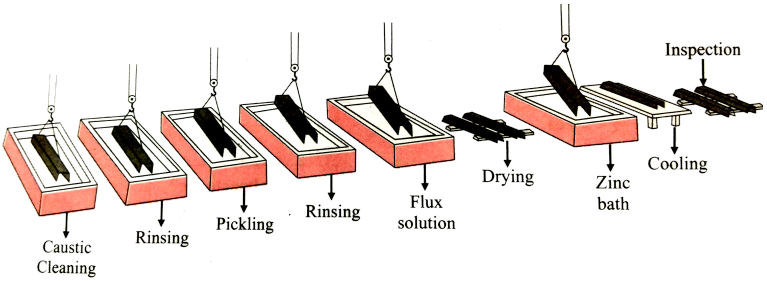
9. Identify the process represented by the following diagram. Describe the process in short. ltbgt



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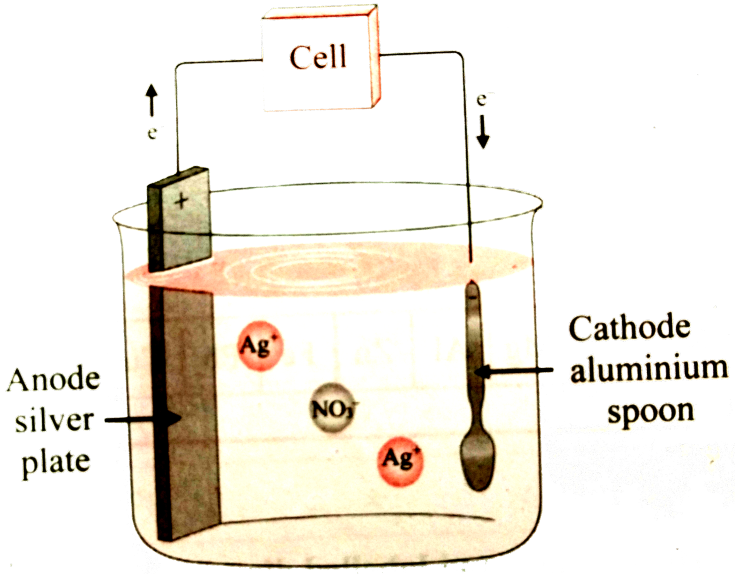
10. Study the diagram and answer the following questions



What does the diagram represent?

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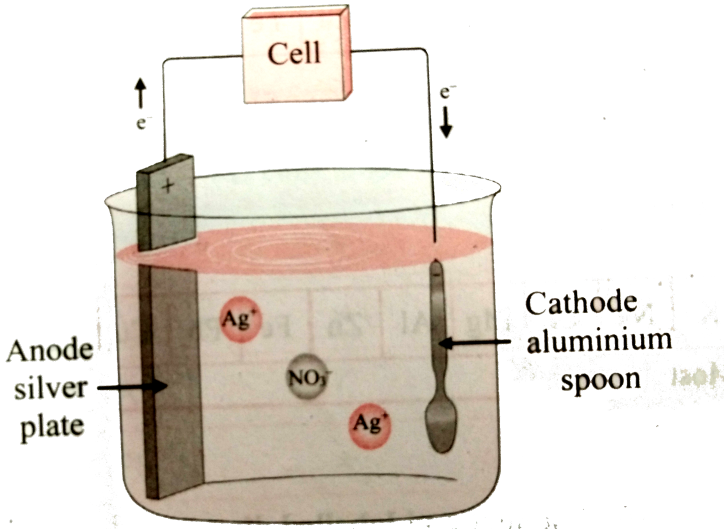
11. Study the diagram and answer the following questions



Write the reactions occurring at cathode and anode.

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Question Based On Paragraph

1. Manish was given aqueous solutions of silver nitrate, zinc sulphate and an iron nail. In the first experiment, he dipped iron nail in silver nitrate solution and observed that the solution turned brown. In second experiment, he dipped iron nail in zinc sulphate solution. However, no change was observed.

Based on the above information, answer the following questions.

Why did solution tum brown in the first experiment?

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2. Manish was given aqueous solutions of silver nitrate, zinc sulphate and an iron nail. In the first experiment, he dipped iron nail in silver nitrate solution and observed that the solution turned brown. In second experiment, he dipped iron nail in zinc sulphate solution. However, no change was observed.

Based on the above information, answer the following questions.

Name the type of reaction that occurs when iron reacts with $AgNO_3$ solution.

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3. Manish was given aqueous solutions of silver nitrate, zinc sulphate and an iron nail. In the first experiment, he dipped iron nail in silver nitrate solution and observed that the solution turned brown. In second experiment, he dipped iron nail in zinc sulphate solution. However, no change was observed.

Based on the above information, answer the following questions.

If he adds zinc strip in ferrous sulphate solution, what colour change will he observe?

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4. Manish was given aqueous solutions of silver nitrate, zinc sulphate and an iron nail. In the first experiment, he dipped iron nail in silver nitrate solution and observed that the solution turned brown. In second experiment, he dipped iron nail in zinc sulphate solution. However, no change was observed.

Based on the above information, answer the following questions.

Will silver react with zinc sulphate solution?

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5. Manish was given aqueous solutions of silver nitrate, zinc sulphate and an iron nail. In the first experiment, he dipped iron nail in silver nitrate solution and observed that the solution turned brown. In second experiment, he dipped iron nail in zinc sulphate solution.

However, no change was observed.

Based on the above information, answer the following questions.

Based on your observation, arrange Ag, Zn and Fe in decreasing order of their reactivity.

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Apply Your Knowledge

1. Which method do we use when we want to study many things together and at the same

time?

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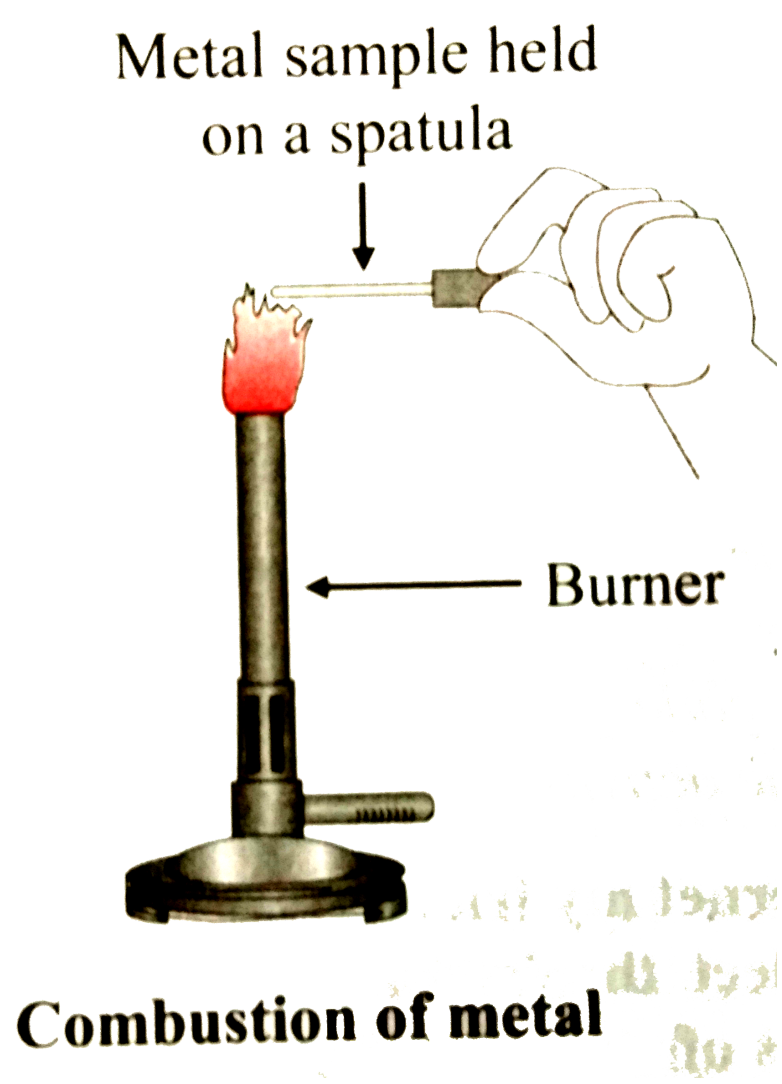
2. Apparatus: Pairs of tongs or spatula, knife, burner, etc.

Chemicals: Samples of aluminium, copper, iron, lead, magnesium, zinc and sodium.

Procedure: Hold the sample of each of the above metals at the top of the flame of a burner with the help of a pair of tongs, or a spatula



Combustion of metal

Which metal catches fire readily?

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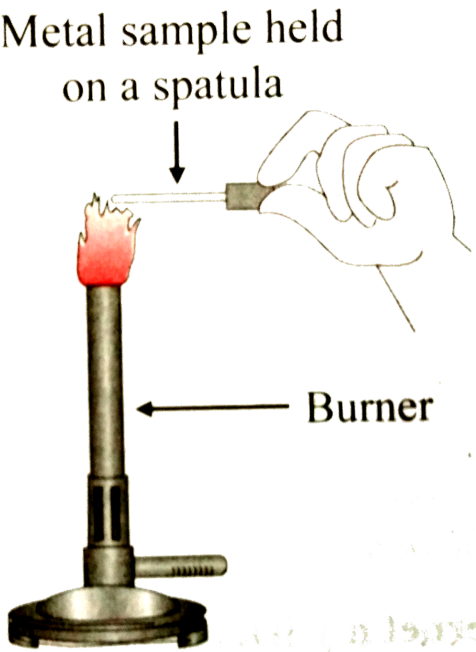
3. Apparatus: Pairs of tongs or spatula, knife, burner, etc.

Chemicals: Samples of aluminium, copper, iron, lead, magnesium, zinc and sodium.

Procedure: Hold the sample of each of the above metals at the top of the flame of a burner with the help of a pair of tongs, or a spatula



Combustion of metal

How does the surface of a metal appear on catching fire?

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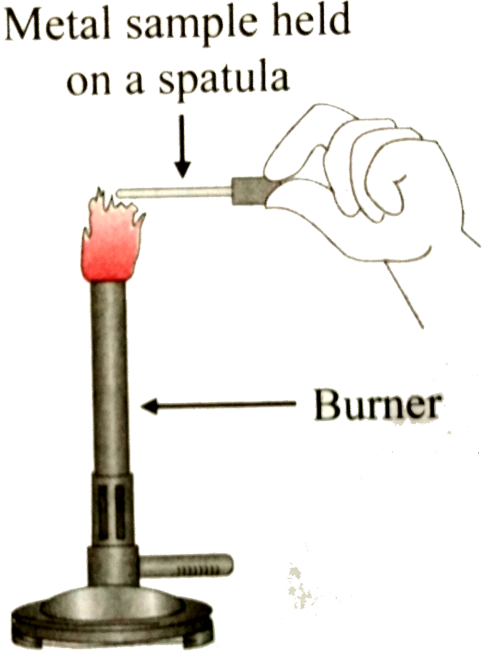
4. Apparatus: Pairs of tongs or spatula, knife, burner, etc.

Chemicals: Samples of aluminium, copper, iron, lead, magnesium, zinc and sodium.

Procedure: Hold the sample of each of the above metals at the top of the flame of a burner with the help of a pair of tongs, or a spatula



Combustion of metal

What is the colour of the flame while the metal is burning on the flame?

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5. Apparatus: Beakers.

Chemicals: Samples of various metals , water.

Procedure: Drop a piece of each of the metal in separate beakers filled with cold water.

Which metal reacts with water?

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6. Apparatus: Beakers.

Chemicals: Samples of various metals , water.

Procedure: Drop a piece of each of the metal

in separate beakers filled with cold water.

Which metal floats on water? Why?

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7. Apparatus: Beakers.

Chemicals: Samples of various metals , water.

Procedure: Drop a piece of each of the metal in separate beakers filled with cold water.

Prepare a table with reference to the above procedure and note your observations in it.

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8. Test whether the metals gold, silver and copper react with water and think over the finding.

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9. A man went door to door posing as a goldsmith. He promised to bring back the glitter of old and dull gold ornaments. An unsuspecting lady gave a set of gold bangles to him which he dipped in a particular

solution. The bangles sparkled like new but their weight was reduced drastically. The lady was upset but after a futile argument the man beat a hasty retreat. Can you play the detective to find out the nature of the solution he had used?

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10. Apparatus: Copper wire, iron nail, beaker or big test tube, etc.

Chemicals: Aqueous solutions of ferrous

sulphate and copper sulphate.

Procedure: i. Take a clean copper wire and a clean iron nail.

ii. Dip the copper wire in ferrous sulphate solution and the iron nail in copper sulphate solution.

iii . Keep on observing continually at a fixed interval of time.

In which test tube a reaction has taken place?

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11. Apparatus: Copper wire, iron nail, beaker or big test tube, etc.

Chemicals: Aqueous solutions of ferrous sulphate and copper sulphate.

Procedure: i. Take a clean copper wire and a clean iron nail.

ii. Dip the copper wire in ferrous sulphate solution and the iron nail in copper sulphate solution.

iii . Keep on observing continually at a fixed interval of time.

How did you recognize that a reaction has taken place?

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12. Apparatus: Copper wire, iron nail, beaker or big test tube, etc.

Chemicals: Aqueous solutions of ferrous sulphate and copper sulphate.

Procedure: i. Take a clean copper wire and a clean iron nail.

ii. Dip the copper wire in ferrous sulphate

solution and the iron nail in copper sulphate solution.

iii . Keep on observing continually at a fixed interval of time.

What is the type of the reaction?

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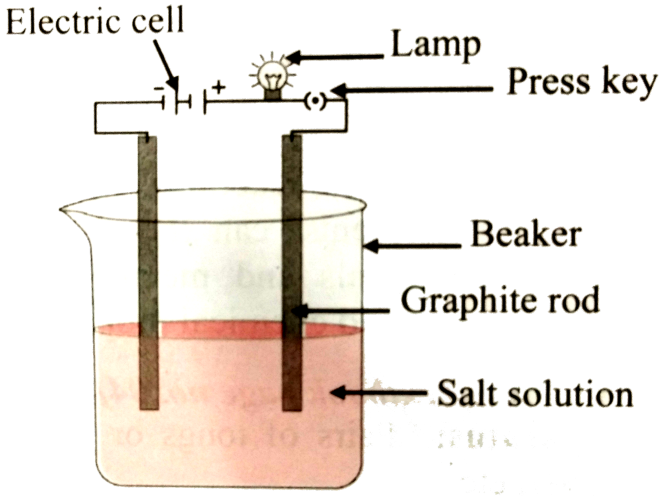
13. Apparatus: Metal spatula, burner, carbon electrodes, beaker, cell, lamp, press key, electrical wires, etc.

Chemicals: Samples of sodium chloride,

potassium iodide and barium chloride, water.

Procedure: Observe the above samples. Place sample of one of the above salts on the spatula and heat it on the flame of the burner. Repeat the procedure using the other salts. As shown in the figure, assemble an electrolytic cell.



Conductivity of salt solution

Assemble an electrolytic cell by using a beaker

and connecting the carbon electrodes to the positive and negative terminal of the cell. Dip the electrodes in solution of any one of the salts. Do you see the lamp glowing? Check this with all the other salts as well.

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14. Collect the information about the different steps of metal extraction and explain it in the class. Collect the related videos

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15. Collect Information. Collect information regarding bar and write is extracted from its ore cinnabar and write the corresponding chemical reaction.

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16. What is corrosion ?

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17. Have you seen the following things?

Old iron bars of buildings, copper vessels not cleaned for long time, silver ornaments or idols exposed to air for long time, old abandoned vehicles fit to be thrown away.

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18. Why do silver articles turn blackish while copper vessels turn greenish on keeping in air for a long time?

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19. Why do pure gold and platinum always glitter?

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20. Which measures would you suggest to stop the corrosion of metallic articles or not to allow the corrosion to start?

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21. What is done so to prevent rusting of iron windows and iron doors of your house?

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22. Can we permanently prevent the rusting of an iron article by applying a layer of paint on its surface?

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23. What are the various alloys used in daily life? Where are those used?

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24. What are the properties that the alloy used for minting coins should have?

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25. Seema wants to purchase a gold ornament. Gold ornaments are not made of pure gold but they are usually made up of 22 carat. Her cousin Isha asks her to check hallmark while purchasing jewellery. Why does she ask to do so?

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26. Collect metal vessels and various metal articles. Write detailed information. Write the

steps in the procedure that can be done in the laboratory for giving glitter to these. Seek guidance from your teacher.

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Chapter Assessment

1. Which one of the following metals does catch fire rapidly when it comes in contact with air?

A. Sodium

B. Magnesium

C. Calcium

D. Aluminium

Answer:

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2. A student added zinc strip to a solution of $CuSO_4$. After several minutes, he observed that the blue colour of solution changed and a

layer got deposited on zinc strip. The colour of the solution and that of the coating would respectively be _____

A. green, black

B. colourless, black

C. colourless, reddish brown

D. green, reddish brown

Answer:

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3. Aqueous solution of which of the following does NOT conduct electricity?

A. Sodium chloride

B. Silver nitrate

C. Barium chloride

D. Glucose

Answer:

 Watch Video Solution

4. Which of the following metals does not react with cold or hot water but reacts with steam?

A. Potassium

B. Calcium

C. Magnesium

D. Iron

Answer:

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5. Identify the odd one out and justify .

Platinum , gold , silver , aluminium

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6. Complete the anology and explain

Gallium : ____ : : Iodine : Solid

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7. True or False . If false, write the correct sentence .

Potassium reacts with water slowly and less vigorously .

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8. Match the following reactions given in Group 'A' with the observations of reaction given in Group 'B'

	Group 'A'		Group 'B'
a.	$Zn + H_2SO_4 \longrightarrow$	1.	Solution turns blue.
b.	Cu + dilute $HCl \longrightarrow$	2.	H_2 gas is evolved.
		3.	No reaction occurs.

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9. Given scientific reasons

Pine oil is used in froth floatation

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10. Given scientific reasons

Anodes need to be replaced from time to time during electrolysis of alumina.

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11. Write chemical equations for the reactions of copper with dilute and concentrated nitric acid

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12. What are the constituents of stainless stell alloy ? Which property of stainless steel makes it suitable for household utensils ?

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13. Identify acidic and basic oxides from the following : Na_2O, SO_2, MgO, CO_2

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14. Complete the following reactions :

$Cl_{2(g)} + H_2O_{(l)} \rightarrow \square + \square$

$Zn_{(s)} + 2HCl_{(aq)} \rightarrow \square + \square$

$CuSO_{4(aq)} + Fe_{(s)} \rightarrow \square + \square$

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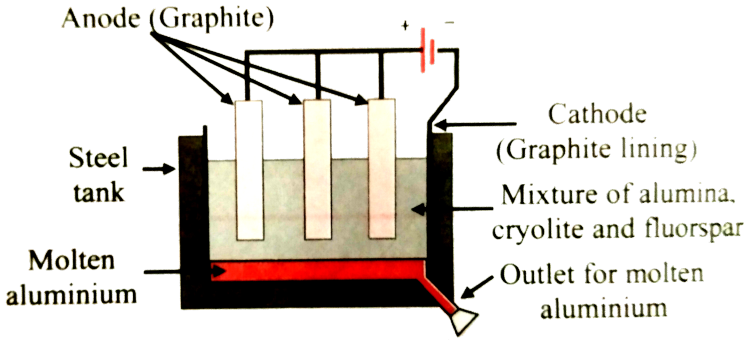
15. The adjacent figure represents electrolytic reduction of alumina.



Electrolytic reduction of alumina

What is the function of cryolite and fluorspar in this process ?

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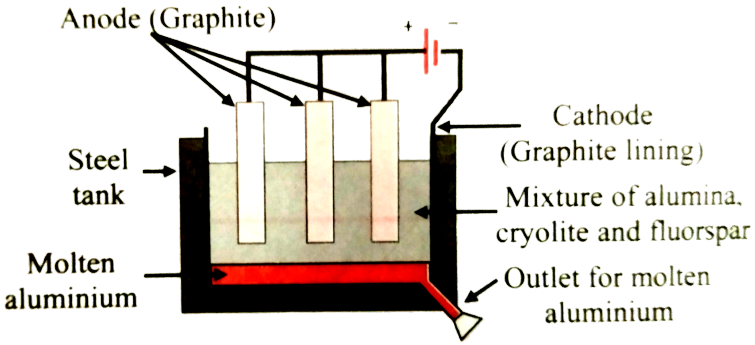
16. The adjacent figure represents electrolytic reduction of alumina.



Electrolytic reduction of alumina

Why do you think molten aluminium gets collected at the bottom of the tank ?

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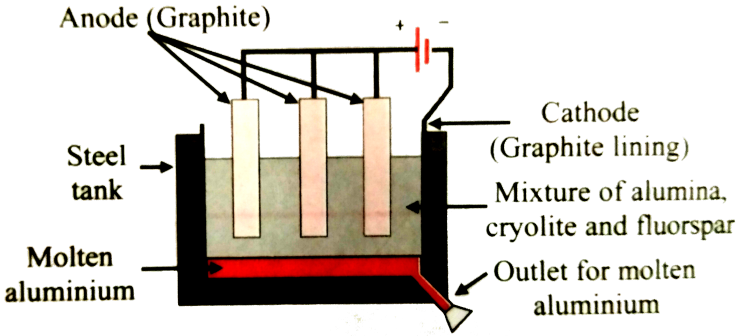
17. The adjacent figure represents electrolytic reduction of alumina.



Electrolytic reduction of alumina

Write the anode reaction in electrolytic reduction of alumina .

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18. What are alloys ? Explain with suitable examples properties of alloys which make them useful over pure metals .

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19. Explain froth floatation process with labelled diagram

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