

India's Number 1 Education App

# **CHEMISTRY**

# **AAKASH INSTITUTE ENGLISH**

# GENERAL PRINCIPLES AND PROCESSES OF ISOLATION OF ELEMENTS



1. Name the compound that contain Mg and

helps green plants during photosynthesis.



**4.** Tin stone (cassiterite) is purified by magnetic separation method. Name and formulate the magnetic chemical present with

it.



## 5. Calcination and Roasting



6. Though tin stone is oxide of tin, yet roasting

is carried out for this ore. Why?

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7. What is the process of smelting? Give one

suitable example also.



8. In Ellingham diagrams plots of  $\Delta G$  (oxide formation) show positive slopes except for the formation of CO(g) from coke. Why?



**9.** If the solubility product of MOH is  $1 \times 10^{-10} M^2$ . Then the pH of its aqueous solution will be

10. What is the percentage of carbon in pig

iron and cast iron?



**11.** Name the zone of blast furnace and its importance that has temperature close to 1273K, in the metallurgy of Fe.



12. What is the main ore of copper from which

it is extracted?

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**13.** What is the material collected from reverberatory furnace in the metalurgy of copper ?

14. In which form is ZnO subjected to smelting in records made of clay ?
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15. Which elements are present with zinc when

it is extracted from zinc oxide ?

16. When is 'polling' used as the method of

purification of metals ?

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17. Which chemical works as reducing agent in

the process of poling ?

18. What is the nature of elements which are

purified by zone-refining method?

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**19.** Write the equations for the Van Arkel method used for the refining of Zirconium, the two temperatures being = 870 K and 2070 K.

20. Which metal is used for reducing  $Cr_2O_3$ 

and  $Mo_2O_3$  to metal ?

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**21.** Name some materials made from cast iron.

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22. Write some uses of aluminimum.

### **Try Yourself**

#### 1. Match the following

Column 1	Column I
Malachite	Fe
Sphalerite	Ag
Horn silver	Zn
Chromite	, Cu

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2. Name the vitamin that contains metal in it.

Name the metal also







washing ? Give two examples also.



**8.** What is the role of collectors in Froth Floatation process ?

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**9.** Sulphdies ores are converted to oxides before reduction . This is explained on the basic of which of the following ?

**10.** Discuss the process of roasting with suitable example.

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#### 11. During roasting the temperature should be

kept below its m.p. Why?

12. What type of the reduction method does the following reaction show (Bessemer converter reaction of metallurgy of copper) ?  $2CuO + Cu_2S \xrightarrow{\Delta} 6Cu + SO_2$ Watch Video Solution

13. Which reducing agent is commonly employed for reduction of (a)ZnOtoZn $(b)Cr_2O_3toCr$  $(c)TiCl_4toTi$ 



intersection indicate ?

16. Name the four man zones of blast furnace

in the extraction of Fe from  $Fe_2O_3$ .



**17.** Write down the reactions taking place in different zones in the blast furnace during the extraction of iron.

-----

**18.** Coke can be used to reduce  $Cu_2O$ . Explain

it based on thermodynamic view.



19. What is the impure copper collected from

Bessemer converter commonly called as ?

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**20.** Name and formulate the main ore from which zinc is extracted.



# 22. Name and formulate the reagent used for

the leaching of argentite.

23. What is the hydrometallurgy of silver or

gold commonly known as ?



**24.** Write the equation of the net reaction taking place in Hall Heroult electrolytic method for the collection of aluminium ?



**26.** Name two metals which are purified by distillation method.



**27.** Impure tin contains  $SnO_2$  as one of the impurities. Name the specific method employed for converting  $SnO_2$  present in impure metal to tin.

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**28.** Impure metal A' is to be purified by electro-refining method. At which position is this impure metal placed in the electrolytic cell ?



**29.** Name the main method of purification employed for the purification of Cu, Zn and Al.

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**30.** Write two uses of zinc.





galvanising iron.





### 1. Concentration of copper glance is done by

A. Leaching

- B. Magnetic separation
- C. Hydraulic washing
- D. Froth Floation method

Answer: D



C. Al

D. All of these

#### Answer: D

**3.** Concentrated ore, calamine is heated to get metal oxide and the volatile impurities escapes away. This process is called

A. Roasting

**B.** Calcination

C. Reduction

D. Oxidation

Answer: B

4. The most commonly used reducing agent is

A. B

B.C

C. Al

D. Fe

Answer: B



**5.** In the froth floatation process the collectors such as pine oils and xanthates etc. enhance

A. Non-wettability of the mineral particles

in froth

B. Non-wettability of the mineral particles

in water

- C. Non-wettability of the gangue particles in froth.
- D. Non-wettability of the gangue particles

in water

#### Answer: B



### 6. $2PbS + 3O_2 \rightarrow 2PbO + 2SO_2$

The above process is callled

A. Roasting

- **B.** Calcination
- C. Smelting
- D. Leaching





**7.** In the manufacture of iron from hematite, limestone is added to act as \_\_\_\_.

A. Reducing agent

B. Oxidising agent

C. Slag

D. Flux

#### Answer: D



8. The plot of  $\Delta G$  versus temperature for the formation of oxides of elements is called

A. Ellingham diagram

- B. Free energy curve
- C. Entropy curve
- D. Isobar

#### Answer: A



**9.** Identify the decreasing order of carbon content in different forms of iron.

A. Wrought iron gt Pig iron gt Cast iron

B. Pig iron gt Cast iron gt Wrought iron

C. Cast iron gt Pig iron gt Wrought iron

D. Cast iron gt Wrought iron gt Pig iron

#### Answer: B



**10.** The pair having oxide and carbonate ore respectively

- A. Chromite, Pyrolusite
- B. Cassiterite, Calamine
- C. Haematite, Galena
- D. Malachite, Bauxite




metal forms anode

cathode

D. Cu motal is not used as electrodes

Answer: A

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**12.** Si is refined by

A. Vapour phase refining

B. Zone refining

C. Liquation

D. van Arkel method

### Answer: B



## 13. Vapour phase refining

A. In

#### B. Ni

D. Hg

Answer: B

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14. Chromatography is based on the principle

of selective \_\_\_\_\_.

A. Adsorption

B. Absorption

C. Concentration

D. Vaporisation

## Answer: A

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# **15.** Refining of Zn is done using the process called

- A. Electrolytic refining
- **B. Distillation**
- C. Liquation

D. Both (1) & (2)

#### Answer: D

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**16.** Solidified Cu obtained from the reverberatory furnace has blistered appearance. This is due to

A. Evolution of  $CO_2$  gas

B. Evolution of  $SO_2$  gas

C. Due to evaporation of volatile materials

D. Evolution of  $NO_2$ 

Answer: B

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17. Poling is used for the purification of:

A. Oxidise impurities present in stor copper

B. Reduce impurities present in blister

copper

C. Reduce impurities using carbon

D. Remove impurities in the form of slag

Answer: B

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18. Sodium, Magnesium and Aluminium can be

obtained from their ore by

A. Electrometallurgy

B. Pyrometalurgy

C. Hydrometallurgy

D. Smelting

## Answer: A



# 19. Which of the following pair can be refined

using some basic principle?

A. Cu,Ag

B. Si,Ge

C. Ti,Ni

D. All of these

Answer: D

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## **Assignment Section A Objective Type Question**

**1.** Which metal is used for extraction of Au and Ag and also for galvanisation of iron objects ?

A. Mg

B.Zn

C. Cr

D. Co

Answer: B



**2.** Which of the following is not correctly matched?

A.  $Chalcopyrites 
ightarrow CuFeS_2$ 

B. Smithsonite  $\rightarrow ZnCO_3$ 

C. Magnetite  $\rightarrow Fe_3O_4$ 

D. Argentite  $ightarrow Na_3AlF_6$ 

Answer: D

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**3.** Which of the following is not a mineral of aluminium ?

A. Bauxite

B. Cryolite

C. China clay

D. Malachite

Answer: D

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**4.** Which is acidic flux ?

## A. CaO

B. MgO

C.  $SiO_2$ 

D. All of these

Answer: C

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5. In the metallurgy of iron, the slag is

A.  $FeSiO_3$ 

B.  $CaCO_3$ 

# $C. CaSiO_3$

D. CaO

## Answer: C



6. What type of ores can be concentrated by

magnetic separation method ?

A. Pyrolusite  $MnO_2$ 

B. Chromite are  $FeOCr_2O_3$ 

C. Magnetite  $Fe_3O_4$ 

D. All of these

## Answer: D



7. Which of the following is commonly used to

produce form in froth floatation process ?

A. Pine oil

B. Cresol

C. NaCN

D. Xanthate

## Answer: A



# **8.** Serpeck's method involves the heating of bauxite with

A. NaOH

 $\mathsf{B.}\,Na_2CO_3$ 

## $C. N_2 + C$

# D. $CaCO_3$

## Answer: C



# 9. A sulphide ore is converted into metal oxide

by the process of:

A. Calcination

B. Roasting

C. Smelting

D. Leaching

## Answer: B



# 10. Which of the following metal oxides are

reduced by self-reduction method ?

A. HgO

B.  $Cu_2O$ 

C. PbO

D.  $Al_2O_3$ 

#### Answer: D



# 11. Which of the following is used as reducing

agent in Goldschmidt method?

A. Al

B. k

C. C

D. Mg

Answer: A



12. Which of the following is used to reduce

 $TiCl_4$  to Ti?

A. C

B. Al

C. Mg

D.  $H_2$ 

## Answer: C



**13.** In Ellingham diagrams plots of  $\Delta_f G$  (oxide formation) show positive slope except for the formation of CO(g) from coke. Why ?

A. Oxides

B. Halides

C. Sulphides

D. All of these

Answer: D

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# **14.** Which of the following statement is correct w.r.t. the following graph?



A. Below 1623 K. Mg reduces  $Al_2O_3$ 

B. Above 1623 K. Al reduces MgO

C. Both (1) & (2) are correct

D. Both (1) & (2) are wrong

Answer: C

**15.** In Elingham diagrams of  $\Delta G$  de formation Vs T, which of the following graphs has negative slope?

A. C 
ightarrow CO

B.  $Fe 
ightarrow Fe_2O_3$ 

 $\mathsf{C}.\,M > oMgO$ 

D. All of these

**Answer: A** 

**16.** Which form of iron is extracted from blast furnance :

A. Zone of combustion:  $C+O_2 
ightarrow CO_2$ B. Zone of heat absorption:  $CO_2 \rightarrow C + O_2$ C. Zone of slag formation:  $CaO + SiO_2 
ightarrow CaSiO_3$ of reduction: D. Zone  $Fe_2O_3 + 3C \rightarrow 3CO + 2Fe$ 





# **17.** Which of the following has lowest percentage of carbon?

A. Pig iron

B. Cast iron

C. Wrought iron

D. Haematte

## Answer: C



**18.** Why partial roasting of sulphide ore is done in the metallurgy of copper ?

A. Muffle furnace

- B. Bessemer converter
- C. Blast fumace
- D. Reverberatory furnace





- **19.** Zinc is extracted from zinc blende by
  - A. Carbon reduction process
  - B. Nitrogen reduction process
  - C. Oxygen reduction process
  - D. All of these

Answer: A



# 20. Which of the following metal is leached by

# Cyanide process

A. Ore of AI:

B. Ore of Ou

C. Ore of Ag

D. Ore of Zn

Answer: C





**21.** Hall-Heroult method is used during extraction of :-

A. Ti

B. Al

C. Au

D. Zn

#### Answer: B



**22.** Poling is used for the purification of:

A. Metal sulphides

B. Metal carbonates

C. Metal bicarbonates

D. Metal oxides

Answer: D

23. Impure zinc, as collected from earthen clay

retort, is called

A. Blister zinc

B. Pig Zinc

C. Zinc spelter

D. Cast zinc

Answer: C

**24.** The process of converting hydrated alumina into anhydrous alumina is called

A. Roasting

**B.** Calcination

C. Dressing

D. Smelting

Answer: B

**25.** Write chemical reactions taking place in the extraction of zinc from zinc blende.

- A. Electrolytic reduction
- B. Roasting followed by reduction with

carbon

C. Roasting followed by reduction with

another metal

D. Roasting followed by self reduction







# 26. Which of the following metal is purified by

distilation process?

A. Zn

B. Fe

C. Al

D. Cu

#### Answer: A
# **27.** Vapour phase refining can be carried out in

case of

A. Ni

B.Zr

C. Ti

D. All of these

#### Answer: D

**28.** Which of the following gives metal by electrolytic reduction conveniently and profitably?

- A. PbO
- $\mathsf{B.}\,Fe_2O_3$
- $\mathsf{C.}\, Cr_2O_3$
- D.  $Al_2O_3$

#### Answer: D



**29.** Which of the following organometallics is

used in the purification of the metal centre ?

A. Liquation

**B. Distillation** 

C. Zone refining

D. Galvanisation

#### Answer: D

30. Which of the following metals is obtained

by the self reduction process?

A. Pb

B. Hg

C. Cu

D. All of these

Answer: D

**1.** Which of the following metal can be extracted without using reducing agent?

A. Sn

B. Pb

C. Fe

D. Both (1) & (2)

#### Answer: B

2. Which of the following metal is extracted by using coke and carbon monoxide as reducing agent?

A. Na

B. Cu

C. Fe

D. Al

#### Answer: C





**3.** Which of the following metals is obtained by leaching its ore with dilute cyanide solution ?

A. Pb

B. Zn

C. Mn

D. Ag

#### Answer: D



**4.** A Substance which reacts with gangue to form fusible material is called

A. Flux

**B.** Catalyst

C. Ore

D. Slag

Answer: A

**5.** Electrolytic reduction method is used fro the extraction of

A. Highly electronegative elements

B. Transition metals

C. Highly electropositive elements

D. Metalloids

Answer: C

6. Cyanide process is used for the extraction of

A. Au

:

B. Cu

C. Zn

D. Fe

Answer: A

7. Calcination is the process in which

A. Heating the are in presence of air

B. Heating the one in absence of air

C. Heating in vacuum

D. Heating of are in presence of  $N_2$ 

Answer: B

**8.** Which of the following metals cannot be extracted by carbon reduction process?

A. Pb

B. Al

C. Hg

D. Zn

Answer: B

**9.** Which of the following is not a refining process?

- A. Mond's process
- B. Van Arkel process
- C. Poling
- D. Laaching

Answer: D

**10.** Which of the following is not a concentration technique?

A. Levigation

**B. Froth-flotation** 

C. Leaching

D. Calcination

Answer: D

11. The Ores that are concentrated by Froth

flotation method

A. Carbonate

**B.** Sulphides

C. Oxides

D. Phosphates

Answer: B

12. In blast furnace iron oxide is reduced by

A. Silica

B. CO

 $\mathsf{C}.\,H_2S$ 

D. Lime stone

Answer: B



**13.** Complexes formed in the cyanide process are:

A.  $Na_2[Ag(CN)]$ 

B. Na[AgCN]

 $\mathsf{C.}\, Na_2 \big[ Ag(CN)_2 \big]$ 

D.  $Na \left[ Ag(CN)_2 
ight]$ 

#### Answer: D

**14.** Zincaite and calamine respectively are

A. Oxide and carbonate ore al Zn

B. Carbonate and oxide ore of Zn

C. Oxide and sulphate or of Zn

D. Sulphate and sulphite gre of Zn

Answer: D



**15.** Which of the following is chalcopyrite?

# A. $CuFeS_2$

## B. $FeS_2$

 $\mathsf{C.}\,kMgCl3.6H_2O$ 

D.  $Al_2O3.2H_2O$ 

#### Answer: A



16. The alloy used in dental filling contains

A. Ag and Sn

B. Ag and Sb

C. Hg. Ag and Sn

D. Hg. Ag and Sb

#### Answer: C

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**17.** What will happen, anode is made of nickel instead af graphite in the extraction of aluminium from  $AICl_3$ ?

A. Nickel will be affected by high

temperature

B. Nickel will combine with  $Cl_2$ 

C. Nickel is insulator

D. Al of these

Answer: B

**18.** When molten NaCl is electrolysed by using inert electrode, the product obtained al cathode is

A. Na

B.  $Cl_2$ 

 $\mathsf{C}.\,H_2$ 

D. Na Hg amalgam

#### Answer: A

**19.** What is the slag formed from  $P_2O_5$  impurity in metallurgy of iron?

A.  $Ca_3(PO_4)_2$ 

 $\mathsf{B.}\,CaSiO_3$ 

C.  $Fe_3(PO_4)_2$ 

D.  $FeSiO_3$ 

**Answer: A** 

**20.** Extraction of zinc from zinc blende

- A. Electrolytic reduction
- B. Roasting followed by reduction with carbon
- C. Calcination followed by reduction with

carbon

D. Roasting followed by self reduction

Answer: B

**21.** From gold amalgam, gold may be recovered by:

A. Distillation

**B. Oxidation** 

C. Electrolytic refining

D. Dissolving in  $HNO_3$ 

## Answer: A

**22.** Which of the following oxide is thermaly least stable?

A. CaO

- $\mathsf{B.}\,Al_2O_3$
- $\mathsf{C.}\,Fe_2O_3$
- D.  $Ag_2O$

#### Answer: D



23. Thomas slag is

- A. Calcium slicate
- B. Anode mud
- C.  $FeSiO_3$
- D. Calcium phosphate

Answer: D



24. Which of the following will give respective

metal by self reduction ?

A. Galena PbS

B. HgS

C. ZnS

D. Both (1) &(2)

Answer: D

**25.** Which of the following statement is incorrect?

A.  $Al_2O_3$ , cannot be reduced into Al by  $Cr_2O_3$ 

B. Ca is stronger reducing agent than Mg

C. At 673 k, CO is poor reducing agent than

carbon

D. All of these

Answer: C

# **Assignment Section C Previous Years Question**

**1.** Extraction of gold and silver involves leaching with  $CN^-$  ion. Silver is later recovered by

A. Liquation

- **B. Distillation**
- C. Zona refining

D. Displacement with Zn

#### Answer: D



2. Aluminium is extracted from Alumina (  $Al_2O_3$  ) by electrolysis of a molten mixture of

A.  $Al_2O_3 + Na_3AlF_6$ 

 $\mathsf{B.} Al_2O_3 + KF + Na_3AlF_6$ 

 $\mathsf{C.}\,Al_2O_3 + HF + NaAlF_4$ 

 $\mathsf{D.}\,Al_2O_3+CaF_2+NaAlF_4$ 

#### Answer: A



**3.** In the extraction of copper fromo its sulphide ore, the metal is formed by the reduction of  $Cu_2O$  with \_\_\_\_\_

A. Iron sulphide (FeS)

B. Carbon monoxide(CO)

C. Copper(I)sulphide $(Cu_2S)$ 

D. Sulphur dioxide $(SO_2)$ 





- **4.** Identify the alloy containing a non-metal as
- a constitutent in it.
  - A. Bell metal
  - B. Bronze
  - C. Invar
  - D. Steel





# **5.** Which ore of the following is a mineral of iron ?

- A. Pyrolusite
- B. Magnetite
- C. Malachite
- D. Cassiterite

#### Answer: B



**6.** Which of the following pairs of metals is purified by van-Arkel method?

A. Ni and Fe

B. Ga and In

C. Zr and Ti

D. Ag and Au





7. Which of the following elements is present as the impurity to the maximum extent in the pig iron?

A. Phosphorus

B. Manganese

C. Carbon

D. Silicon
#### Answer: C



8. The following reaction take place in the blast in the preparation of impure iron identify the reaction pertaining to the formation of the slag

A.  $CaO(s)+SiO_2(s)
ightarrow CaSiO_3(s)$ 

B.  $2C(s) + O_2(g) 
ightarrow 2CO(g)$ 

## $Fe_2O_3(s)+3CO(g) ightarrow 2Fe(l)+3CO_2(g)$

D.  $CaCO_3(s) 
ightarrow CaO(s) + CO_2(g)$ 

#### Answer: A

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#### 9. Match the following

List - I

#### (Substances)

- a. Sulphuric acid
- b. Steel

Sodium hydroxide (iii) Leblanc process

d. Ammonia

List - II

#### (Processes)

- (i) Haber's process
- (ii) Bessemer's process
- (iv) Contact process

A. (a)(i),b(iv),c(ii),d(iii)

B. (a)(i),b(ii),c(iii),d(iv)

C. (a)(iv),b(iii),c(ii),d(i)

D. (a)(iv),b(ii),c(iii),d(i)

Answer: D

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**10.** Which of the following statements, about the advantage of roasting of sulphide ore before reduction is not true gt



Answer: B

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**11.** Sulphide ores of metals are usually concentrated by froth floatation process. Which one of the following sulphide ores offers an exception and is concentrated by chemical leaching?

A. Sphaterite

B. Argentile

C. Galena

D. Copper pynite

#### Answer: B



**12.** The mass of carbon anode consumed (giving only carbon dioxide) in the production of 270 kg of aluminium metal from bauxite by the Hall process is (at . Mass of A1=27)

A. 180 kg

- B. 270 kg
- C. 540 kg

D. 90 kg

#### Answer: D

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13. In which of the following processes, fused sodium hydroxide is electrolysed at a  $333^{\circ}C$  temperature for extraction of sodium

A. Castner process

B. Cyanide process



D. Both (2) & (3)

#### Answer: C



## **14.** Which of the following does not contain aluminium?

A. Cryolite

B. Fluorspar

C. Feldspar

D. Mica

Answer: B



**15.** Which of the following does not contain Mg?

A. Magnetite

B. Asbestos

## C. Magnesite

D. Canalile

#### Answer: A



### 16. Carborundum is

A.  $CaC_2$ 

B.  $CaCO_3$ 

## $\mathsf{C.}\,Fe_3C$

D. SiC

#### Answer: D

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**17.** In the basic Bessemer process for the manufacture of steel, the lining of the converter is made up of \_\_\_\_. The slag formed consists of \_\_\_\_.

#### A. Steel

B. Wrought iron

C. Pig iron

D. Cast iron

Answer: A

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18. Mond's process is used for

A. Ni

B. Al

C. Fe

D. Cu

#### Answer: A

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## **19.** Which process of purification is represented by the following reaction ? $T \hspace{0.2cm} i+2I_2 \stackrel{250\,^{\circ}C}{\longrightarrow} TiI_4 \stackrel{1400\,^{\circ}C}{\longrightarrow} _{-}T \hspace{0.2cm} i+2I_2$

Impure Pure

A. Poling

- B. Electro refining
- C. Zone refining
- D. van Arkel process

## Answer: D

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**20.** Which of the following sulphides when heated strongly in air gives the corresponding metal?

A. CuS

B.  $Fe_2S_3$ 

C. FeS

D. HgS

Answer: D

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21. The most important ore of tin is

A. Cassiterite

B. Cryolite

C. Malachite

D. All of these

Answer: A

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22. Heating of ore in presence of air to remove

sulphure impurities is called

A. Calcination

- B. Roasting
- C. Smelting
- D. None of these

## Answer: B

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# **23.** The process used for the extraction of sodium is called :

A. NaCl(aq)

B. NaCI(l)

## C. NaOH(aq)

D.  $NaNO_3(aq)$ 

### Answer: B

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**24.** Among the metals Cr, Fe, Mn, Ti, Ba, and Mg, the one that cannot be obtained by reduction of metal oxide by aluminium is A. Cr

B. Fe

C. Mn

D. Mg

Answer: D



25. Chemical used as a depressant in separatin

ZnS from PbS in froth-floatation process, is

A. NaCN

B. NaCl

C. AgCl

D. All of these

Answer: A

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26. The ore that contains both iron and copper

is: a. malachite b. dolomite c. azurite d. copper

pyrites

A. Cuprite

B. Chalcocite

C. Chalcopyrite

D. Malachite

#### Answer: C



**27.** To dissolve argentite ore which of the following is

## A. $Na \left[ Ag(CN)_2 ight]$

#### B. NaCN

C. NaCl

D. HCl

#### Answer: B



## 28. The iron obtained from the blast furnace is

called:

A. Wrought iron

B. Cast iron

C. Pig iron

D. Steel

Answer: C



**29.** How are metals used as semiconductors refined ? What is the principle of the method used like germanium, silicon etc. ?

A. Van Arkel method

B. Mond process

C. Distillation

D. Zone refining

#### Answer: D



# **30.** Which of the following oxide is least stable?

A.  $CO_2$ 

#### B. CO

C. MgO

D. HgO

Answer: D



31. The underlying of blast furnace is made of

A. Graphite bricks

B. Silica bricks

C. Basic briks

D. Fireclay brickes

### Answer: D

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**32.** Roasting of sulphides gives the gas X as a by-product. This is a colourless gas with choking smell of burnt sulphur and causes great damage to respiratory organs as a result

of acid rain. Its aqueous solution is acidic acts as a reducing agent and its acid has never insolated. The gas X is

A.  $SO_2$ 

- $\mathsf{B.}\,CO_2$
- $\mathsf{C}.SO_3$
- $\mathsf{D.}\,H_2S$

#### Answer: A

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33. Which of the following mineral contains

calcium as well as magnesium ?

A. Tridymite

B. Aragonite

C. Dolomite

D. Camalite

Answer: C

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**1.** A: Cuprite is concentrated by froth floatation

R: Cuprite is the sulphide ore.

process

A. If both Assertion & Reason are true and

the reason is the correct explanation of

the assertion, then mark (1).

B. If both Assertion & Reason are true but

the reason is not the correct explanation

of the assertion, then mark (2)

C. If Assertion is true statement but Reason

is false, then mark

D. If both Assertion and Reason are false

statements, then mark (4)

Answer: D

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2. A: Bauxite is purified by leaching process

R: Aluminium oxide reacts with NaOH to form soluble sodium meta aluminate.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).
B. If both Assertion & Reason are true but the reason is not the correct explanation

of the assertion, then mark (2)

C. If Assertion is true statement but Reason

is false, then mark

D. If both Assertion and Reason are false

statements, then mark (4)

Answer: A

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**3.** A: A: Calamine and Dolomite are the carbonate ores.

R: Calamine is  $ZnCO_3$  whereas Dolomite is  $MgCO_3 ZnCO_3$ 

A. If both Assertion & Reason are true and

the reason is the correct explanation of

the assertion, then mark (1).

B. If both Assertion & Reason are true but

the reason is not the correct explanation

of the assertion, then mark (2)

C. If Assertion is true statement but Reason

is false, then mark

## D. If both Assertion and Reason are false

statements, then mark (4)

Answer: C

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A: Roasting process is involved in the metallurgy of Cu from Malachite ore.
R: Roasting is the process of heating the ore in absence of air.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1). B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2) C. If Assertion is true statement but Reason is false, then mark D. If both Assertion and Reason are false statements, then mark (4)

#### Answer: D



**5.** A: Metallurgy of Ag from Argentite is known as hydro-metallurgy

R: Argentile is  $Ag_2S$ .

A. If both Assertion & Reason are true and

the reason is the correct explanation of

the assertion, then mark (1).
B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2) C. If Assertion is true statement but Reason is false, then mark D. If both Assertion and Reason are false

Answer: B

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statements, then mark (4)

**6.** In the manufacture of iron from hematite, limestone is added to act as

A. If both Assertion & Reason are true and

the reason is the correct explanation of

the assertion, then mark (1).

B. If both Assertion & Reason are true but

the reason is not the correct explanation

of the assertion, then mark (2)

C. If Assertion is true statement but Reason

is false, then mark

## D. If both Assertion and Reason are false

statements, then mark (4)

Answer: D

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**7.** A: Ultrapure metals are obtained by zone refining.

R: Van arkel method is used for purification of titanium





8. The purest form of iron is

A. If both Assertion & Reason are true and

the reason is the correct explanation of

the assertion, then mark (1).

B. If both Assertion & Reason are true but

the reason is not the correct explanation

of the assertion, then mark (2)

C. If Assertion is true statement but Reason

is false, then mark

D. If both Assertion and Reason are false

statements, then mark (4)

Answer: A

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9. A: Magnesium oxide is used for the lining in

steel making furnace.

R: Magnesium oxides acts as flux

A. If both Assertion & Reason are true and

the reason is the correct explanation of

the assertion, then mark (1).

B. If both Assertion & Reason are true but

the reason is not the correct explanation

of the assertion, then mark (2)

C. If Assertion is true statement but Reason

is false, then mark

D. If both Assertion and Reason are false

statements, then mark (4)

Answer: A

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**10.** A: Aluminium metal is used as a reducing agent for the extraction of metals

R: Aluminium has great affinity for oxygen

## Answer: A



**11.** STATEMENT-1 : Zinc and not copper is used in the recovery of silver from the complex  $\left[Ag(CN)_2\right]^-$ 

and

STATEMENT-2 : Zinc is more powerful oxidising agent than copper.





- **12.** A: Hydrometallurgy is used for extraction of Ag and Au.
- R: Hydrometallurgy is different from pyrometallurgy
  - A. If both Assertion & Reason are true and
    - the reason is the correct explanation of
    - the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2) C. If Assertion is true statement but Reason is false, then mark D. If both Assertion and Reason are false

Answer: B

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statements, then mark (4)

**13.** A: Pure silver is obtained by electrolysis of  $AgNO_3$  solution

R: In electrolysis impure silver is taken as cathode and pure silver is taken as anode.

A. If both Assertion & Reason are true and

the reason is the correct explanation of

the assertion, then mark (1).

B. If both Assertion & Reason are true but

the reason is not the correct explanation

of the assertion, then mark (2)

C. If Assertion is true statement but Reason

is false, then mark

D. If both Assertion and Reason are false

statements, then mark (4)

Answer: C

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14. In blast furnace iron oxide is reduced by

## Answer: B



**15.** A:In Hall process Aluminium is purified. B: $Al_2O_3(aq)$ is used in Hall process.

A. If both Assertion & Reason are true and

the reason is the correct explanation of

the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2) C. If Assertion is true statement but Reason is false, then mark D. If both Assertion and Reason are false

statements, then mark (4)

Answer: D

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