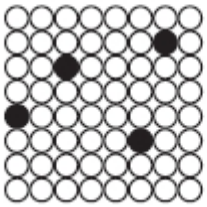
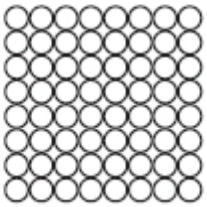
# iG Chem 10 EQ P2 18s to 16m Metals and metal extraction 67marks

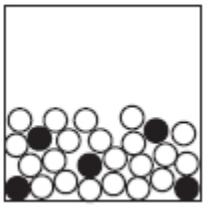
**Q# 1/** iGCSE Chemistry/2018/s/Paper 23/

**24** Which diagram represents a solid alloy?

A 

B 

C 

D 

**25** The ionic equations for four reactions are shown.

$$Z + X^{2+} \rightarrow Z^{2+} + X$$

$$Z + 2W^{+} \rightarrow Z^{2+} + 2W$$

$$X + 2W^{+} \rightarrow X^{2+} + 2W$$

$$Y + Z^{2+} \rightarrow Y^{2+} + Z$$

What is the order of reactivity of the four metals, W, X, Y and Z?

| | most reactive → least reactive | | | |
|---|---|---|---|---|
| **A** | W | X | Z | Y |
| **B** | X | W | Y | Z |
| **C** | Y | Z | X | W |
| **D** | Z | W | X | Y |

**26** Which equation represents the first stage in the extraction of zinc from zinc blende?

**A** $2ZnS + 3O_2 \rightarrow 2ZnO + 2SO_2$

**B** $ZnS + H_2O \rightarrow ZnO + H_2S$

**C** $ZnO + CO \rightarrow Zn + CO_2$

**D** $ZnO + H_2SO_4 \rightarrow ZnSO_4 + H_2O$

**27** Which statement explains why aluminium is used to manufacture aircraft?

**A** It has a low density.

**B** It is a good conductor of electricity.

**C** It is a good conductor of heat.

**D** It is ductile.

**24** Stainless steel is an alloy of iron, carbon and other metals.

Which row is correct?

| | stainless steel is harder than pure iron | stainless steel resists corrosion better than pure iron |
|---|---|---|
| **A** | ✓ | ✓ |
| **B** | ✓ | ✗ |
| **C** | ✗ | ✓ |
| **D** | ✗ | ✗ |

**25** Metal X is more reactive than metal Y. Metal Y is more reactive than metal Z.

Which statement is correct?

**A** When metal X is placed in a solution of Y sulfate, there is no reaction.

**B** When metal X is placed in a solution of Z sulfate, a reaction occurs.

**C** When metal Y is placed in a solution of Z sulfate, there is no reaction.

**D** When metal Z is placed in a solution of X sulfate, a reaction occurs.

**26** Which statement about the industrial extraction of zinc is correct?

**A** Cryolite is added to lower the melting point.

**B** Molten zinc oxide is electrolysed.

**C** Zinc oxide is heated with coke.

**D** Zinc sulfide is heated with coke.

**27** Which row describes the use of an alloy and the property upon which the use depends?

| | alloy | use | property |
|---|---|---|---|
| **A** | mild steel | cutlery | resistant to corrosion |
| **B** | mild steel | machinery | strong |
| **C** | stainless steel | cutlery | low density |
| **D** | stainless steel | machinery | good conductor of electricity |



**Q# 3/** iGCSE Chemistry/2018/s/Paper 21/

**24** The following statements are made about the metals copper, iron, magnesium and zinc.

1 Their oxides are acidic.

2 They all conduct electricity in the solid state.

3 They all have high melting points.

4 They all react with dilute acids to form hydrogen.

Which statements are correct?

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

**25** Silver is a less reactive metal than cadmium.

Cadmium is a less reactive metal than barium.

Which statement is correct?

**A** Barium does not react when heated with silver oxide.

**B** Cadmium displaces barium from a solution of barium chloride.

**C** Cadmium displaces silver from a solution of silver nitrate.

**D** Cadmium reacts when heated with barium oxide.

**26** Aluminium metal is extracted from aluminium oxide using electrolysis.

Which statement about the extraction process is **not** correct?

**A** A large amount of electricity is required.

**B** Molten cryolite is used to dissolve the aluminium oxide.

**C** Oxygen gas is released which reacts to form carbon dioxide.

**D** The negative electrodes burn away and have to be replaced.

**27** Which statement explains why aluminium is used in the manufacture of aircraft?

**A** It conducts heat well.

**B** It has a low density.

**C** It is a good conductor of electricity.

**D** It is easy to recycle.

**Q# 4/** iGCSE Chemistry/2018/m/Paper 22/

**27** In which reaction does Fe(s) form ions when the mixture is heated?

**A** Fe(s) + CaO(s)

**B** Fe(s) + MgO(s)

**C** Fe(s) + ZnO(s)

**D** Fe(s) + CuO(s)

**28** The list gives the order of some metals and hydrogen in the reactivity series.

Metal X is also included.

| | |
|---|---|
| most reactive | K |
| | Mg |
| | Zn |
| | H |
| | X |
| least reactive | Cu |

Which row correctly shows the properties of metal X?

| | reacts with dilute acids | oxide reduced by carbon |
|---|---|---|
| **A** | no | no |
| **B** | no | yes |
| **C** | yes | no |
| **D** | yes | yes |

**29** Which metal carbonate does **not** produce carbon dioxide when it is heated?

**A** copper(II) carbonate

**B** iron(II) carbonate

**C** potassium carbonate

**D** zinc carbonate

**30** Which statement about the extraction of metals is correct?

**A** Aluminium is extracted by the electrolysis of hematite.

**B** Cryolite acts as a reducing agent in the extraction of aluminium.

**C** Zinc is extracted by the electrolysis of zinc blende.

**D** Zinc is obtained by heating zinc oxide with coke.

**Q# 5/** iGCSE Chemistry/2017/w/Paper 23/

**26** Aluminium is obtained by the electrolysis of a mixture of aluminium oxide and cryolite.

Why is cryolite used?

**A** as a catalyst to speed up the process

**B** as a coolant to prevent the process getting too hot

**C** as a solvent for aluminium oxide

**D** as the main source of aluminium ions

**27** Metal M is mixed with copper to produce brass.

What is M?

**A** chromium

**B** nickel

**C** vanadium

**D** zinc

**28** Some metal nitrates and carbonates decompose when heated strongly.

Metal Q has a nitrate that decomposes to give a salt and a colourless gas only.

The carbonate of metal Q does not decompose when heated with a Bunsen burner.

What is metal Q?

**A** calcium

**B** copper

**C** sodium

**D** zinc

**Q# 6/** iGCSE Chemistry/2017/w/Paper 22/

**26** Aluminium is extracted from bauxite by electrolysis.

Which row shows the anode material and the anode reaction?

| | anode material | anode reaction |
|---|---|---|
| **A** | carbon | $Al^{3+} + 3e^- \rightarrow Al$ |
| **B** | carbon | $2O^{2-} \rightarrow O_2 + 4e^-$ |
| **C** | steel | $Al^{3+} + 3e^- \rightarrow Al$ |
| **D** | steel | $2O^{2-} \rightarrow O_2 + 4e^-$ |

**27** Which statement about the metal zinc is **not** correct?

**A** It forms an oxide more readily than iron.

**B** It is manufactured by the electrolysis of zinc blende.

**C** It is used to make brass.

**D** It is used to prevent iron from rusting.



**28** Calcium nitrate decomposes when it is heated.

What is the equation for the thermal decomposition of calcium nitrate?

**A** $2Ca(NO_3)_2 \rightarrow 2CaO + O_2 + 4NO_2$

**B** $Ca(NO_3)_2 \rightarrow Ca(NO_2)_2 + O_2$

**C** $Ca(NO_3)_2 \rightarrow Ca + O_2 + 2NO_2$

**D** $Ca(NO_3)_2 \rightarrow Ca + 3O_2 + N_2$

**Q# 7/** iGCSE Chemistry/2017/w/Paper 21/

**25** What is a property of **all** metals?

**A** conduct electricity

**B** hard

**C** low melting points

**D** react with water

**26** Aluminium is extracted by the electrolysis of aluminium oxide.

Which statement is **not** correct?

**A** Aluminium ions are oxidised at the cathode.

**B** Carbon dioxide is made at the anode.

**C** Cryolite is added to lower the melting point of the aluminium oxide.

**D** The electrodes are made from graphite.

**27** Which row describes how the metals are used?

| | mixed with zinc to form brass | used to galvanise iron |
|---|---|---|
| **A** | aluminium | tin |
| **B** | aluminium | zinc |
| **C** | copper | tin |
| **D** | copper | zinc |



**28** Information about the nitrates and carbonates of two metals, Q and R, is shown.

| | appearance | solubility in water | effect of heat |
|---|---|---|---|
| nitrate of Q | white solid | soluble | colourless gas evolved which relights a glowing splint |
| carbonate of Q | white solid | soluble | no reaction |
| nitrate of R | white solid | soluble | brown gas evolved |
| carbonate of R | white solid | insoluble | colourless gas evolved which turns limewater milky |

Which statement is correct?

**A** Q is calcium and R is magnesium.

**B** Q is magnesium and R is sodium.

**C** Q is potassium and R is copper.

**D** Q is sodium and R is calcium.

**Q# 8/** iGCSE Chemistry/2017/s/Paper 23/

**25** Which equation from the zinc extraction process shows the metal being produced by reduction?

**A** $ZnO + C \rightarrow Zn + CO$

**B** $2ZnS + 3O_2 \rightarrow 2ZnO + 2SO_2$

**C** $Zn(g) \rightarrow Zn(l)$

**D** $Zn(l) \rightarrow Zn(s)$

**27** The section of the reactivity series shown includes a newly discovered element, symbol X.

The only oxide of X has the formula XO.

Ca

Mg

Fe

X

H

Cu

Which equation shows a reaction which occurs?

**A** $Cu(s) + X^{2+}(aq) \rightarrow Cu^{2+}(aq) + X(s)$

**B** $2X(s) + Cu^{2+}(aq) \rightarrow 2X^{+}(aq) + Cu(s)$

**C** $X(s) + Fe_2O_3(s) \rightarrow 2Fe(s) + 3XO(s)$

**D** $X(s) + 2HCl(aq) \rightarrow XCl_2(aq) + H_2(g)$

**25** Which process is involved in the extraction of zinc from zinc blende?

**A** Cryolite is added to lower the melting point of zinc blende.

**B** Molten zinc blende is electrolysed.

**C** Zinc blende is heated with carbon.

**D** Zinc blende is roasted in air.

**26** Element E:

- forms an alloy
- has a basic oxide
- is below hydrogen in the reactivity series.

What is E?

**A** carbon

**B** copper

**C** sulfur

**D** zinc

**27** A list of metals is shown.

aluminium

copper

iron

magnesium

silver

zinc

Which metal will displace all of the other metals from aqueous solutions of their salts?

**A** aluminium

**B** iron

**C** magnesium

**D** zinc



**25** Metal X is added to a colourless aqueous solution of the sulfate of metal Y.

A coloured solution is formed and metal Y is deposited at the bottom of the beaker.

Which row describes elements X and Y and their relative reactivity?

| | type of element | relative reactivity |
|---|---|---|
| **A** | X is a transition element | X is more reactive than Y |
| **B** | X is a transition element | Y is more reactive than X |
| **C** | Y is a transition element | X is more reactive than Y |
| **D** | Y is a transition element | Y is more reactive than X |

**26** Element E:

- forms an alloy
- has a basic oxide
- is below hydrogen in the reactivity series.

What is E?

**A** carbon

**B** copper

**C** sulfur

**D** zinc

**27** Zinc metal is extracted from its ore zinc blende in a similar method to that used to extract iron from hematite.

In which way is zinc extraction different from iron extraction?

**A** Carbon and carbon monoxide are the main reducing agents.

**B** Hot air at the base of the furnace reacts with coke to keep the furnace hot.

**C** The metal is removed as a vapour at the top of the furnace.

**D** The metal oxide is added into the top of the furnace.

**28** Stainless steel is an alloy of iron and other metals. It is strong and does not rust but it costs much more than normal steel.

What is **not** made from stainless steel?

**A** cutlery

**B** pipes in a chemical factory

**C** railway lines

**D** saucepans

**26** Which statement about **all** metals is correct?

**A** They are attracted to a magnet.

**B** They are weak and brittle.

**C** They may be used to form alloys.

**D** They react with water.

**27** Which substance produces sulfur dioxide when roasted in air?

**A** bauxite

**B** cryolite

**C** hematite

**D** zinc blende

**28** Which metal carbonate does **not** produce carbon dioxide when it is heated with a Bunsen burner?

**A** copper(II) carbonate

**B** magnesium carbonate

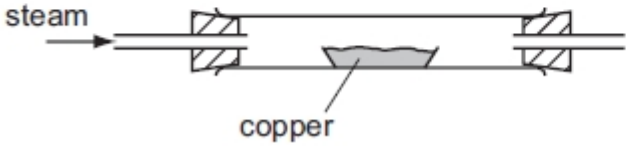
**C** sodium carbonate

**D** zinc carbonate

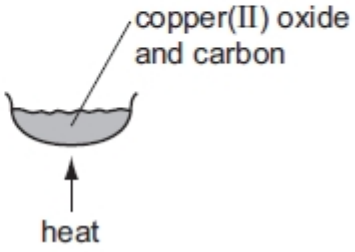
**29** Two experiments are carried out.

In experiment 1, copper is heated with steam.

In experiment 2, copper(II) oxide is heated with carbon.




experiment 1




experiment 2

Which row describes what happens in experiments 1 and 2?

| | experiment 1 | experiment 2 |
|---|---|---|
| **A** | no reaction | no reaction |
| **B** | no reaction | reaction |
| **C** | reaction | no reaction |
| **D** | reaction | reaction |

**25** Basic oxides and oxygen are used to convert iron into steel.

Which statement is **not** correct?

**A** Carbon is converted into carbon dioxide.

**B** Silicon is converted into silicon(IV) oxide.

**C** The basic oxides react with acidic impurities to form slag.

**D** The oxygen reacts with the iron to produce hematite.

**26** The results of two experiments are given.

1 Cobalt displaces manganese from an aqueous solution of a manganese salt.

2 Manganese displaces silver from an aqueous solution of a silver salt.

Three more experiments are carried out.

3 Cobalt is added to an aqueous solution of a silver salt.

4 Manganese is added to an aqueous solution of a cobalt salt.

5 Silver is added to an aqueous solution of a cobalt salt.

In which experiments does a reaction take place?

**A** 3 only **B** 3 and 4 **C** 4 and 5 **D** 5 only

**27** Cryolite, $Na_3AlF_6$, is added to aluminium oxide in the electrolytic extraction of aluminium.

What is the reason for this?

**A** to decrease the melting point of the electrolyte

**B** to protect the anodes

**C** to produce more aluminium

**D** to stop the aluminium reacting with air

**28** Different forms of steel contain different proportions of carbon.

Steel P contains a high proportion of carbon.

Steel Q contains a low proportion of carbon.

Which statement is correct?

**A** P is stronger and more brittle than Q.

**B** P is stronger and less brittle than Q.

**C** P is less strong and more brittle than Q.

**D** P is less strong and less brittle than Q.

**25** Impurities in iron obtained from the blast furnace include carbon, phosphorus and silicon.

Which impurities are removed from the molten iron as gases when it is made into steel?

**A** carbon and phosphorus

**B** carbon and silicon

**C** carbon only

**D** phosphorus and silicon

**26** Y displaces X from its aqueous sulfate.

X does not displace W from its aqueous sulfate.

X displaces Z from its aqueous sulfate.

What is the order of reactivity of elements W, X, Y and Z?

| | most reactive → | | | least reactive |
|---|---|---|---|---|
| **A** | W | X | Y | Z |
| **B** | W | Y | X | Z |
| **C** | Z | X | Y | W |
| **D** | Z | W | Y | X |

**27** Which statement about the industrial extraction of aluminium from aluminium oxide is correct?

**A** Aluminium is extracted by heating its oxide with carbon.

**B** Aluminium is extracted using electrolysis and is collected at the anode.

**C** Aluminium is extracted using platinum electrodes and direct current.

**D** Molten cryolite is used as a solvent for aluminium oxide.

**28** The alloy brass is a mixture of copper and another metal.

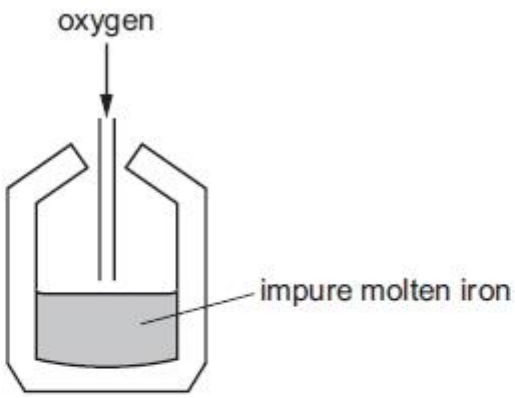
Brass is used to make the pins of electrical plugs.

Copper is used to make electrical wiring.

Which row about brass is correct?

| | hardness | electrical conductivity | other metal |
|---|---|---|---|
| **A** | harder than copper | better than copper | tin |
| **B** | harder than copper | worse than copper | zinc |
| **C** | softer than copper | better than copper | tin |
| **D** | softer than copper | worse than copper | zinc |

**25** Impure iron from the blast furnace is converted to steel as shown.




Which statement about the process is correct?

**A** Acidic oxides are added to remove alkaline impurities.

**B** Coke is added as a reducing agent.

**C** Oxygen is blown in to oxidise the impure iron.

**D** The steel produced contains less carbon than the impure iron.

**26** The ionic equations represent the reactions between four metals, P, Q, R and S, and solutions of the salts of the same metals.

$$P + Q^{2+} \rightarrow \text{no reaction}$$

$$R + P^{2+} \rightarrow R^{2+} + P$$

$$Q + S^{2+} \rightarrow Q^{2+} + S$$

$$S + P^{2+} \rightarrow S^{2+} + P$$

$$S + R^{2+} \rightarrow S^{2+} + R$$

$$S + Q^{2+} \rightarrow \text{no reaction}$$

What is the correct order of reactivity of the metals?

| | most → | | | least |
|---|---|---|---|---|
| **A** | P | R | S | Q |
| **B** | Q | R | S | P |
| **C** | Q | S | R | P |
| **D** | S | Q | P | R |

27 Aluminium is extracted by electrolysis.

From which ore is aluminium extracted and at which electrode is aluminium deposited during electrolysis?

| | ore | electrode |
|---|---|---|
| **A** | bauxite | negative |
| **B** | bauxite | positive |
| **C** | cryolite | negative |
| **D** | cryolite | positive |

28 Zinc oxide can be reacted with carbon to produce zinc metal.

Which equation for this reaction is correct?

**A** $2ZnO + C \rightarrow 2Zn + CO$

**B** $2ZnO + 2C \rightarrow 2Zn + 2CO_2$

**C** $ZnO + C \rightarrow Zn + CO$

**D** $ZnO + 2C \rightarrow Zn + 2CO_2$

**Q# 15/** iGCSE Chemistry/2016/s/Paper 23/

26 Four metals P, Q, R and S are added to separate aqueous solutions of their ions.

The results are shown.

| metal | $P^{2+}$ | $Q^{2+}$ | $R^{2+}$ | $S^{2+}$ |
|---|---|---|---|---|
| P | ✗ | ✗ | ✓ | ✓ |
| Q | ✓ | ✗ | ✓ | ✓ |
| R | ✗ | ✗ | ✗ | ✗ |
| S | ✗ | ✗ | ✓ | ✗ |

key

✓ = reaction occurs

✗ = reaction does not occur

What is the order of reactivity of the metals, most reactive first?

**A** Q → P → S → R

**B** Q → S → P → R

**C** R → P → S → Q

**D** R → S → P → Q

27 Copper is a transition element used to make saucepans.

Which property is **not** correct for copper?

**A** good conductor of heat

**B** insoluble in water

**C** low melting point

**D** malleable (can be hammered into shape)

**28** Aluminium is extracted by electrolysis of a mixture of aluminium oxide and cryolite.

Which statement is **not** correct?

**A** The electrodes are made from graphite.

**B** The formula for aluminium oxide is $Al_2O_3$.

**C** The purpose of the cryolite is to lower the melting point of the mixture.

**D** The reaction taking place at the anode is $Al^{3+} + 3e^- \rightarrow Al$.

**Q# 16/** iGCSE Chemistry/2016/s/Paper 22/

**25** Some magnesium compounds undergo thermal decomposition.

What are the products of thermal decomposition of magnesium nitrate, $Mg(NO_3)_2$, and magnesium hydroxide, $Mg(OH)_2$?

| | $Mg(NO_3)_2$ | $Mg(OH)_2$ |
|---|---|---|
| **A** | MgO, $NO_2$ and $O_2$ | MgO and $H_2O$ |
| **B** | MgO, $NO_2$ and $O_2$ | MgO and $H_2$ |
| **C** | $Mg(NO_2)_2$ and $O_2$ | MgO and $H_2O$ |
| **D** | $Mg(NO_2)_2$ and $O_2$ | MgO and $H_2$ |

**26** Which property is **not** considered a typical metallic property?

**A** good conductor of heat

**B** low melting point

**C** malleable (can be hammered into shape)

**D** strong

**27** Iron from a blast furnace is treated with oxygen and with calcium oxide to make steel.

Which substances in the iron are removed?

| | oxygen removes | calcium oxide removes |
|---|---|---|
| **A** | carbon | acidic oxides |
| **B** | carbon | basic oxides |
| **C** | iron | acidic oxides |
| **D** | iron | basic oxides |

**28** Why is cryolite used during the extraction of aluminium by electrolysis?

**A** It is a catalyst for the reaction.

**B** It lowers the melting point of the electrolyte.

**C** It protects the anodes.

**D** It separates the aluminium from the electrolyte.

**25** A student investigated the reactions of four metals, R, S, T and U, with solutions of their salts.

The results are given in the table.

| metal | metal salt | result |
|---|---|---|
| R | S nitrate | reacts |
| R | T nitrate | reacts |
| S | U nitrate | no reaction |
| T | U nitrate | reacts |
| U | R nitrate | no reaction |

What is the order of reactivity of the metals, most reactive first?

**A** R → S → U → T

**B** R → T → U → S

**C** S → U → T→ R

**D** U → R → T → S

**26** Three students, X, Y and Z, were told that solid P reacts with dilute acids and also conducts electricity.

The table shows the students' suggestions about the identity of P.

| X | Y | Z |
|---|---|---|
| copper | iron | graphite |

Which of the students are correct?

**A** X, Y and Z **B** X only **C** Y only **D** Z only

**27** Which statement about the uses of metals is correct?

**A** Aluminium is used in the manufacture of aircraft because of its strength and high density.

**B** Copper is used in electrical wiring because of its strength and high density.

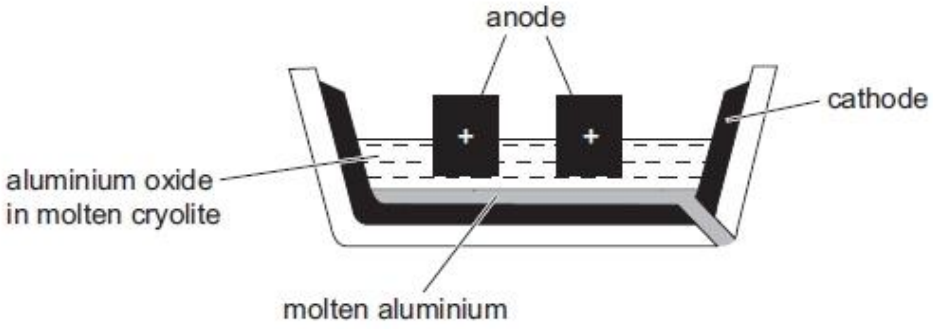
**C** Mild steel is used in the manufacture of car bodies because of its strength and resistance to corrosion.

**D** Stainless steel is used in the construction of chemical plant because of its strength and resistance to corrosion.



**28** Aluminium is manufactured by electrolysis of aluminium oxide.

The diagram shows the electrolysis cell.




Which statement about the process is **not** correct?

**A** Aluminium ions gain electrons during the electrolysis and are reduced.

**B** Cryolite is added to reduce the melting point of the aluminium oxide.

**C** The anode and cathode are made of graphite.

**D** The cathode has to be replaced regularly because it is burnt away.

**Q# 18/** iGCSE Chemistry/2016/m/Paper 22/

**11** Which reaction does **not** occur in the extraction of aluminium?

**A** $Al^{3+} + 3e^- \rightarrow Al$

**B** $2Al_2O_3 + 3C \rightarrow 4Al + 3CO_2$

**C** $2O^{2-} \rightarrow O_2 + 4e^-$

**D** $C + O_2 \rightarrow CO_2$

**Q# 19/** iGCSE Chemistry/2016/m/Paper 22/

**25** Brass is an alloy of two metals.

Which row gives a correct use for the two metals from which brass is made?

| | metal 1 | metal 2 |
|---|---|---|
| **A** | used for electrical wiring | used for galvanising steel |
| **B** | used for galvanising steel | used for making aircraft |
| **C** | used for making aircraft | used for making cutlery |
| **D** | used for making cooking pans | used for electrical wiring |

**26** Iron is extracted from hematite in the blast furnace.

The hematite contains silicon(IV) oxide (sand) as an impurity.

What reacts with this impurity to remove it?

**A** calcium oxide

**B** carbon

**C** carbon dioxide

**D** slag

**27** The reaction below is called the 'thermite reaction'.

$$2Al + Fe_2O_3 \rightarrow 2Fe + Al_2O_3$$

Which pair of substances reacts in a similar way?

**A** Fe and MgO

**B** Fe and ZnO

**C** Mg and CuO

**D** Zn and $Al_2O_3$

## Mark Scheme iG Chem 10 EQ P2 18s to 16m 67marks

**Q# 1/** iGCSE Chemistry/2018/s/Paper 23/

| | |
|---|---|
| 24 | B |
| 25 | C |
| 26 | A |
| 27 | A |

**Q# 2/** iGCSE Chemistry/2018/s/Paper 22/

| | |
|---|---|
| 24 | A |
| 25 | B |
| 26 | C |
| 27 | B |

**Q# 3/** iGCSE Chemistry/2018/s/Paper 21/

| | |
|---|---|
| 24 | C |
| 25 | C |
| 26 | D |
| 27 | B |

**Q# 4/** iGCSE Chemistry/2018/m/Paper 22/

| | |
|---|---|
| 27 | D |
| 28 | B |
| 29 | C |
| 30 | D |

**Q# 5/** iGCSE Chemistry/2017/w/Paper 23/

| | |
|---|---|
| 25 | A |
| 26 | C |
| 27 | D |
| 28 | C |

**Q# 6/** iGCSE Chemistry/2017/w/Paper 22/

| | |
|---|---|
| 25 | A |
| 26 | B |
| 27 | B |
| 28 | A |

**Q# 7/** iGCSE Chemistry/2017/w/Paper 21/

| | |
|---|---|
| 25 | A |
| 26 | A |
| 27 | D |
| 28 | D |

**Q# 8/** iGCSE Chemistry/2017/s/Paper 23/

| | |
|---|---|
| 25 | A |
| 27 | D |

**Q# 9/** iGCSE Chemistry/2017/s/Paper 22/

| | |
|---|---|
| 25 | D |
| 26 | B |
| 27 | C |
| 28 | C |

**Q# 10/** iGCSE Chemistry/2017/s/Paper 21/

| | |
|---|---|
| 25 | A |
| 26 | B |
| 27 | C |
| 28 | C |

**Q# 11/** iGCSE Chemistry/2017/m/Paper 22/

| | |
|---|---|
| 26 | C |
| 27 | D |
| 28 | C |
| 29 | B |

**Q# 12/** iGCSE Chemistry/2016/w/Paper 23/

| | |
|---|---|
| 25 | **D** |
| 26 | **A** |
| 27 | **A** |
| 28 | **A** |

**Q# 13/** iGCSE Chemistry/2016/w/Paper 22/

| | |
|---|---|
| 25 | **C** |
| 26 | **B** |
| 27 | **D** |
| 28 | **B** |

**Q# 14/** iGCSE Chemistry/2016/w/Paper 21/

| | |
|---|---|
| 25 | **D** |
| 26 | **C** |
| 27 | **A** |
| 28 | **C** |

**Q# 15/** iGCSE Chemistry/2016/s/Paper 23/

| | |
|---|---|
| 26 | **A** |
| 27 | **C** |
| 28 | **D** |

**Q# 16/** iGCSE Chemistry/2016/s/Paper 22/

| | |
|---|---|
| 25 | **A** |
| 26 | **B** |
| 27 | **A** |
| 28 | **B** |

**Q# 17/** iGCSE Chemistry/2016/s/Paper 21/

| | |
|---|---|
| 25 | **B** |
| 26 | **C** |
| 27 | **D** |
| 28 | **D** |

**Q# 18/** iGCSE Chemistry/2016/m/Paper 22/

| | |
|---|---|
| 11 | **B** |

**Q# 19/** iGCSE Chemistry/2016/m/Paper 22/

| | |
|---|---|
| 25 | **A** |
| 26 | **A** |
| 27 | **C** |