

MCQ D

- 1 In which pair do neither of the gases change the colour of damp blue litmus paper?
- A ammonia and hydrogen
 - B ammonia and hydrogen chloride
 - C carbon dioxide and chlorine
 - D carbon dioxide and sulfur dioxide

Your answer

- 2 Naturally-occurring bromine has a relative atomic mass of 80 and consists entirely of two isotopes of relative atomic masses 79 and 81. What can be deduced about naturally-occurring bromine from this information only?
- A Bromine contains the two isotopes in equal proportions.
 - B Bromine has different oxidation states.
 - C Bromine isotopes have different numbers of protons.
 - D Bromine is radioactive.

Your answer

- 3 Which compound has molecules each of which contains only two covalent bonds?
- A CH_4
 - B H_2O
 - C MgCl_2
 - D Na_2O

Your answer

- 4 An ionic bond is formed by
- A electron sharing between metals and non-metals.
 - B electron sharing between non-metals.
 - C electron transfer between non-metals.
 - D electron transfer from metals to non-metals.

Your answer

- 5 Both magnesium oxide, MgO , and aluminium oxide, Al_2O_3 , are solids at room temperature, 25°C .
 MgO has a melting point of 2852°C and a boiling point of 3600°C .
 Al_2O_3 has a melting point of 2072°C and a boiling point of 2880°C .
Over which temperature range will both pure compounds conduct electricity?
- A 25 to 2852°C
 - B 2072 to 2852°C
 - C 2852 to 2880°C
 - D 2880 to 3600°C

Your answer

- 6 Which substance conducts an electric current but remains chemically unchanged?
A aluminium
B aqueous sodium chloride
C molten lead(II) bromide
D pure ethanoic acid

Your answer

- 7 Which statement most clearly indicates that diamond and graphite are forms of carbon?
A Both are crystalline solids.
B Complete combustion of equal masses of both solids produces equal masses of carbon dioxide as the only product.
C Graphite conducts electricity whereas diamond is an insulator.
D Under suitable conditions graphite can be partially converted into diamond.

Your answer

- 8 In an experiment, 1cm^3 of a gaseous hydrocarbon X required 4cm^3 of oxygen for complete combustion to give 3cm^3 of carbon dioxide. All gas volumes are measured at r.t.p.
Which formula represents X?

- A C_2H_2
B C_2H_4
C C_3H_4
D C_3H_8

Your answer

- 9 What is the concentration of a solution containing 1.0g of sodium hydroxide in 250cm^3 of solution?
A 0.025 mol/dm^3
B 0.10 mol/dm^3
C 0.25 mol/dm^3
D 1.0 mol/dm^3

Your answer

- 10 Which gas could be used to convert copper(II) oxide to copper?
A carbon dioxide
B hydrogen
C nitrogen
D oxygen

Your answer

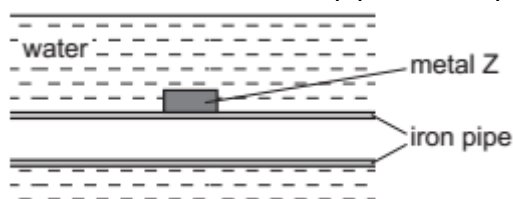
- 11 Aluminium reacts with chromium(III) oxide as shown.
 aluminium + chromium(III) oxide → chromium + aluminium oxide
 Which statements are correct?
 1 Aluminium is more reactive than chromium.
 2 A similar reaction would also take place between aluminium and iron(III) oxide.
 3 Iron(III) oxide is reduced by another metal in the blast furnace.
- A 1, 2 and 3
 B 1 and 2 only
 C 1 and 3 only
 D 2 and 3 only

Your answer

- 12 Using the Periodic Table for the relative atomic masses, which has the least mass?
 A 0.1 moles of silicon dioxide, SiO₂
 B 0.5 moles of oxygen, O₂
 C 0.5 moles of lithium, Li
 D 1.0 moles of ammonia, NH₃

Your answer

- 13 The diagram shows how an underwater iron pipe can be protected from rusting.



Metal Z can be1..... because it is2..... reactive than iron.
 Which words correctly complete gaps 1 and 2?

	1	2
A	copper	less
B	copper	more
C	magnesium	less
D	magnesium	more

Your answer

- 14 Brass is an alloy.
 Which statement about brass is correct?
 A It contains a sea of electrons.
 B It contains positive and negative ions which are free to move.
 C It is a compound of a metal and a non-metal.
 D It is a compound of two or more metals.

Your answer

- 15 Which item is made from mild steel?
A a car body
B a container to store gas in a chemical plant
C a scalpel for use in an operating theatre
D a set of cutlery

Your answer

- 16 The table shows the composition of exhaust gases from an internal combustion engine.

gas	% of the gas in the exhaust fumes
gas Y	71
carbon dioxide	14
water vapour	13
carbon monoxide	1
hydrocarbons	0.3
nitrogen oxides	0.2
sulfur dioxide	less than 0.003

What is gas Y?

- A ammonia
B argon
C chlorine
D nitrogen

Your answer

- 17 Which two gases do not damage limestone buildings?
A nitrogen and carbon monoxide
B nitrogen dioxide and carbon monoxide
C nitrogen dioxide and carbon dioxide
D sulfur dioxide and carbon dioxide

Your answer

- 18 Iron(III) oxide can be reduced to iron by carbon.
Which other element can reduce iron(III) oxide to iron?
A copper
B lead
C magnesium
D silver

Your answer

- 19 Which is a correct definition of isomers?
A atoms with the same relative atomic mass and different structures
B compounds with the same molecular formula and different structures
C compounds with the same molecular mass and different structures
D elements with the same molecular mass and the same structures

Your answer

20 Two esters have the same molecular formula, $C_3H_6O_2$.

What are the names of these two esters?

- 1 methyl ethanoate
- 2 ethyl propanoate
- 3 ethyl methanoate
- 4 propyl methanoate

A 1 and 2

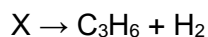
B 1 and 3

C 2 and 4

D 3 and 4

Your answer

21 When cracked, one mole of a compound, X, produces one mole of propene and one mole of hydrogen.



What type of compound is X?

A an alcohol

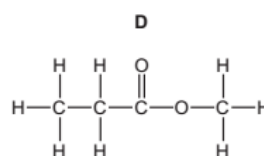
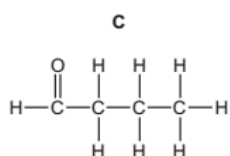
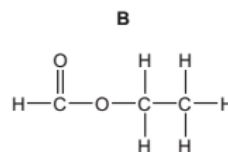
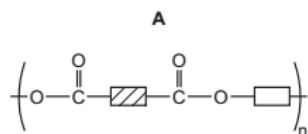
B an alkane

C an alkene

D a carboxylic acid

Your answer

22 Which of the following has not been prepared by reacting a carboxylic acid with an alcohol?



Your answer

23 Which of these polymers is a protein?

A $(C_2H_3Cl)_n$

B $(C_5H_8O_2)_n$

C $(C_6H_{10}O_5)_n$

D $(C_2H_3NO)_n$

Your answer

- 24 In the addition polymer poly(propene), what is the simplest ratio of carbon atoms to hydrogen atoms?

	carbon atoms	hydrogen atoms
A	1	2
B	2	1
C	2	4
D	3	6

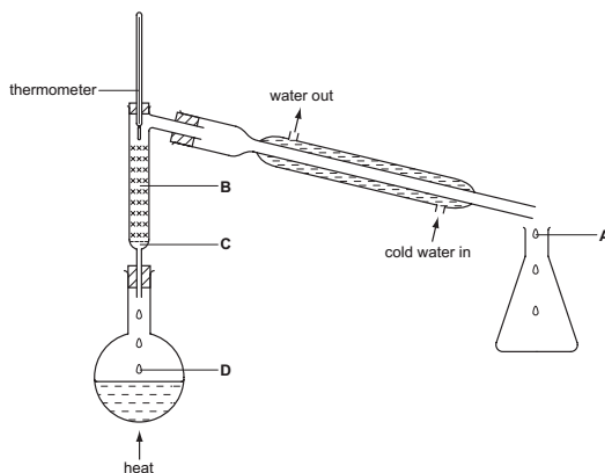
Your answer

- 25 Which is an anion that is present in the solution formed when an excess of dilute hydrochloric acid is added to calcium carbonate?

- A Ca^{2+}
 B Cl^-
 C CO_3^{2-}
 D H^+

Your answer

- 26 A mixture containing equal volumes of two liquids that mix completely but do not react together is placed in the apparatus shown and heated until the thermometer first shows a steady reading. At which position will there be the highest proportion of the liquid with the higher boiling point?

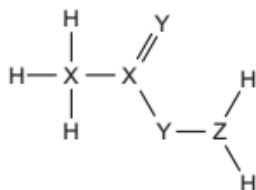


Your answer

- 27 Which pair of elements, when combined together, do not form a covalent compound?
 A caesium and fluorine
 B nitrogen and chlorine
 C phosphorus and fluorine
 D sulfur and chlorine

Your answer

- 28 The diagram shows the structure of a covalent compound containing the element hydrogen, H, and the unknown elements X, Y and Z.



To which groups of the Periodic Table do these three elements, X, Y and Z, belong?

	X	Y	Z
A	1	5	6
B	4	5	1
C	4	6	5
D	5	1	4

Your answer

- 29 A metal consists of a lattice of positive ions in a 'sea of electrons'. What changes, if any, take place to the electrons and positive ions in a metal wire when an electric current is passed through it?

	electrons	positive ions
A	replaced by new electrons	replaced by new ions
B	replaced by new electrons	unchanged
C	unchanged	replaced by new ions
D	unchanged	unchanged

Your answer

- 30 What is the mass of one mole of carbon-12?

- A 0.012g
- B 0.024g
- C 1 g
- D 12g

Your answer