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WESTMINSTER INTERNATIONAL SCHOOL HOLIDAY WORK AUGUST 2025 F2 CHEMISTRY 0620/21
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TOTAL NO. OF QUESTIONS 15

INSTRUCTIONS TO CANDIDATES :

PRINT THE WORK THEN :

* ENCIRCLE THE CORRECT LETTER

- 1 The diagram shows the result of dropping a purple crystal into water.



Which processes take place in this experiment?

	chemical reaction	diffusing	dissolving
A	✓	✓	x
B	✓	x	x
C	x	x	✓
D	x	✓	✓

- 2 Which row about elements, mixtures and compounds is correct?

	metallic element	non-metallic element	mixture	compound
A	copper	methane	brass	sulfur
B	brass	sulfur	copper	methane
C	copper	sulfur	brass	methane
D	brass	methane	copper	sulfur

- 3 What are the relative charge and relative mass of an electron?

	relative charge	relative mass
A	0	1
B	0	$\frac{1}{2000}$
C	-1	1
D	-1	$\frac{1}{2000}$

- 4 The atomic structures of four particles, W, X, Y and Z, are shown.

	electrons	neutrons	protons
W	2	2	2
X	2	2	3
Y	2	3	2
Z	3	2	3

Which particles are isotopes of the same element?

- A W and X B W and Y C X and Y D X and Z
- 5 Which row shows the properties of an ionic compound?

	electrical conductivity of solid	melting point / °C
A	good	98
B	good	3652
C	poor	78
D	poor	801

- 6 Which row describes the formation of single covalent bonds in methane?

A	atoms share a pair of electrons	both atoms gain a noble gas electronic structure
B	atoms share a pair of electrons	both atoms have the same number of electrons in their outer shell
C	electrons are transferred from one atom to another	both atoms gain a noble gas electronic structure
D	electrons are transferred from one atom to another	both atoms have the same number of electrons in their outer shell

- 7 Which equation represents the neutralisation of nitric acid using sodium hydroxide?

- A $\text{NaOH(aq)} + \text{HNO}_3\text{(aq)} \rightarrow \text{NaNO}_3\text{(aq)} + \text{H}_2\text{O(l)}$
- B $\text{NaOH(aq)} + \text{HNO}_3\text{(aq)} \rightarrow \text{NaNO}_3\text{(l)} + \text{H}_2\text{O(l)}$
- C $\text{NaOH(l)} + \text{HNO}_3\text{(l)} \rightarrow \text{NaNO}_3\text{(l)} + \text{H}_2\text{O(aq)}$
- D $\text{NaOH(l)} + \text{HNO}_3\text{(l)} \rightarrow \text{NaNO}_3\text{(l)} + \text{H}_2\text{O(l)}$

18 Which statements about the trends across a period of the Periodic Table are correct?

- 1 Aluminium is more metallic than sodium.
- 2 Beryllium is more metallic than carbon.
- 3 Boron is more metallic than lithium.
- 4 Magnesium is more metallic than silicon.

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

19 Which row shows the trend in melting point, density and reactivity as Group I is descended?

	melting point	density	reactivity
A	increases	decreases	decreases
B	decreases	increases	increases
C	increases	decreases	increases
D	decreases	increases	decreases

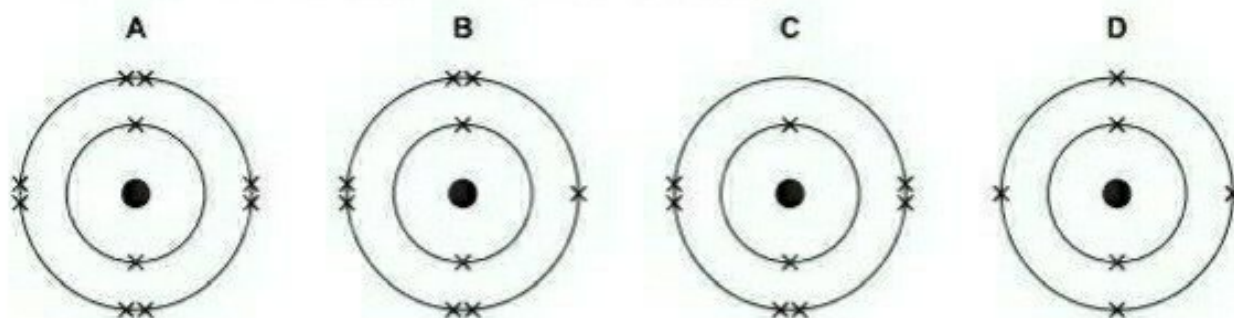
20 Which row describes a similarity and a difference between chlorine and bromine?

	similarity	difference
A	both are gases at room temperature and pressure	chlorine and bromine have different colours
B	both exist as diatomic molecules	chlorine is more dense than bromine
C	both have atoms with seven outer-shell electrons	only bromine will react with aqueous sodium chloride
D	both react with aqueous potassium iodide	chlorine is more reactive than bromine

21 Which statement describes transition elements?

- A** They have high densities and high melting points.
- B** They have high densities and low melting points.
- C** They have low densities and high melting points.
- D** They have low densities and low melting points.

22 Which diagram shows the electronic structure of a noble gas?



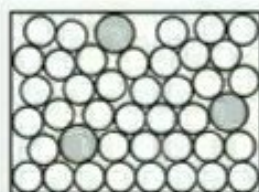
23 Which gas is made when powdered zinc is added to dilute hydrochloric acid?

- A carbon dioxide
- B chlorine
- C hydrogen
- D oxygen

24 Which metal is used in aircraft manufacture because it has a low density?

- A aluminium
- B copper
- C iron
- D potassium

25 The diagram represents the structure of a solid.



Which solids does the diagram represent?

	brass	graphite	sodium chloride
A	✓	✓	x
B	✓	x	x
C	x	✓	✓
D	x	x	✓