

1 Some properties of four elements, P, Q, R and S, are shown in the table.

Two of these elements are in Group I of the Periodic Table and two are in Group VII.

element	reaction with water	physical state at room temperature
P	reacts vigorously	solid
Q	does not react with water	solid
R	reacts explosively	solid
S	dissolves giving a coloured solution	liquid

Which statement is correct?

- A P is below R in Group I.
- B Q is above R in Group I.
- C Q is below S in Group VII.
- D R is below S in Group VII.

2 Rubidium is a Group I metal.

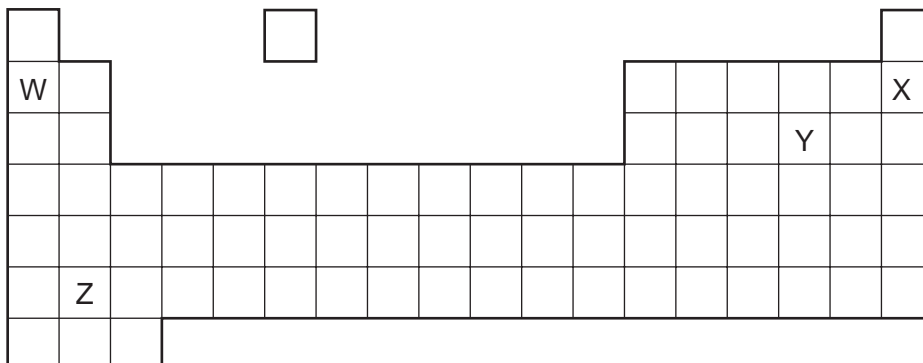
Which statement about rubidium is **not** correct?

- A It has a higher melting point than lithium.
- B It has one electron in its outer shell.
- C It reacts vigorously with water.
- D It reacts with chlorine to form rubidium chloride, RbCl .

3 Which statement about the elements in Group I is correct?

- A Hydrogen is evolved when they react with water.
- B Ions of Group I elements have a -1 charge.
- C Sodium is more reactive than potassium.
- D Solid sodium is a poor electrical conductor.

4 The diagram shows a simplified form of the Periodic Table:



Which elements will form an acidic oxide?

- A** W and Z **B** W only **C** X and Y only **D** Y only

5 Which statements about Group I and Group VII elements are correct?

- 1 In Group I, lithium is more reactive than potassium.
- 2 In Group VII, chlorine is more reactive than fluorine.

	statement 1	statement 2
A	✓	✓
B	✓	x
C	x	✓
D	x	x

12 The table shows some properties of the Group I metals.

metal	melting point/°C	hardness	reaction with water
lithium	181	moderately soft	steady effervescence
sodium	98	soft	vigorous effervescence
potassium	63	very soft	very vigorous effervescence
rubidium	?	?	?

What are the properties of rubidium?

- A** melts below 63°C, very soft, reacts explosively with water
- B** melts below 63°C, very soft, reacts slowly with water
- C** melts above 181°C, very soft, reacts explosively with water
- D** melts above 181°C, very soft, reacts slowly with water

13 X is a Group I metal.

Y and Z are Group VII elements.

When X reacts with Y a salt is formed. A solution of this salt reacts with Z to form a different salt.

What are X, Y and Z?

	X	Y	Z
A	K	Cl ₂	I ₂
B	Li	Cl ₂	Br ₂
C	Mg	Br ₂	Cl ₂
D	Na	I ₂	Cl ₂

14 Which pair of elements will react together most violently?

- A** chlorine and lithium
- B** chlorine and potassium
- C** iodine and lithium
- D** iodine and potassium

15 The table shows some information about elements in Group VII of the Periodic Table.

name	state at room temperature	colour
chlorine	gas	yellow-green
bromine	liquid	brown
iodine	?	?
astatine	solid	black

Which information about iodine completes the table?

	state	colour
A	liquid	black
B	liquid	green
C	solid	grey
D	solid	yellow

16 The positions of elements W, X, Y and Z in the Periodic Table are shown.

Which elements form basic oxides?

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

17 Elements in Group I of the Periodic Table react with water.

Which row describes the products made in the reaction and the trend in reactivity of the elements?

	products	trend in reactivity
A	metal hydroxide and hydrogen	less reactive down the group
B	metal hydroxide and hydrogen	more reactive down the group
C	metal oxide and hydrogen	less reactive down the group
D	metal oxide and hydrogen	more reactive down the group

18 Which statement about the elements of Group I is correct?

- A** Lithium is more dense than sodium.
B Potassium has a higher density than lithium.
C Potassium is less reactive than sodium.
D Sodium has a higher melting point than lithium.

19 Element X is a non-metal.

In which position of the Periodic Table could element X be found?

- A at the bottom of Group I
- B at the top of Group 0
- C at the top of Group I
- D in the transition elements

20 The diagrams show the labels of four bottles.

Which label is **not** correct?

A	B	C	D
Bromine Br ₂ Harmful liquid. Do not spill.	Iodine I ₂ Danger Avoid breathing vapour from the solid.	Potassium K Danger Store under water.	Sodium Na Danger Store under oil.

21 Fluorine is at the top of Group VII in the Periodic Table.

Which row shows the properties of fluorine?

	colour	state at room temperature	reaction with aqueous potassium iodide
A	brown	gas	no reaction
B	brown	liquid	iodine displaced
C	yellow	gas	iodine displaced
D	yellow	liquid	no reaction

22 Group I metals are also known as the Alkali Metals.

Which statement about the metals in Group I is **not** correct?

- A In their reactions they lose electrons.
- B Their atoms all have one electron in their outer shell.
- C They form +1 ions in their reactions with non-metals.
- D They form covalent compounds by sharing electrons.

23 Which element will be less reactive than the other members of its group in the Periodic Table?

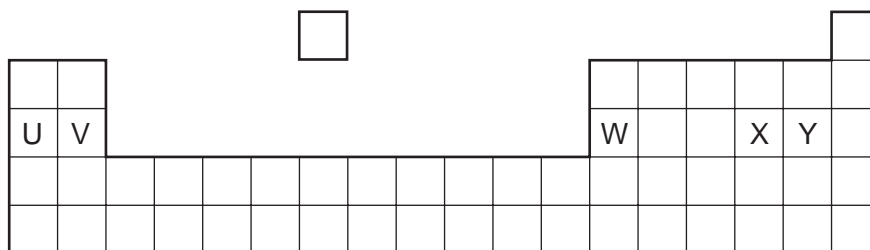
- A astatine
- B caesium
- C fluorine
- D rubidium

24 Bromine is in Group VII on the Periodic Table.

Which describes the appearance of bromine at room temperature?

- A grey solid
- B purple fumes
- C red-brown liquid
- D yellow gas

25 The diagram shows an outline of the Periodic Table.



Which of the elements U, V, W, X and Y would react together in the ratio of 1 : 1?

- A** U and X **B** U and Y **C** V and Y **D** W and X

26 The element rubidium, Rb, is immediately below potassium in the Periodic Table.

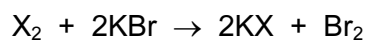
It reacts with bromine to form the compound rubidium bromide.

Which descriptions of this compound are correct?

	type of bond	formula	colour
A	covalent	RbBr	brown
B	covalent	RbBr ₂	white
C	ionic	RbBr	white
D	ionic	RbBr ₂	brown

27 Element X is in Group VII of the Periodic Table.

It reacts with aqueous potassium bromide as shown.



Which statements about X are correct?

	relative atomic mass	reactivity
A	greater than that of bromine	less reactive than bromine
B	greater than that of bromine	more reactive than bromine
C	less than that of bromine	less reactive than bromine
D	less than that of bromine	more reactive than bromine

28 The diagram shows a section of the Periodic Table.

Which element is described below?

'A colourless, unreactive gas that is denser than air.'

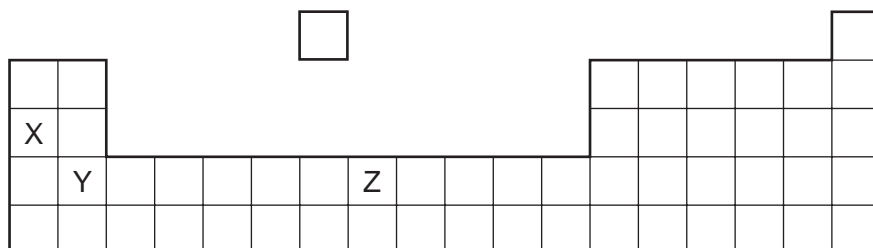
			A
	B		
		C	
			D

29 Element X is below iodine in the Periodic Table.

Which row correctly shows the physical state of element X at room temperature and its reactivity compared with that of iodine?

	physical state of element X at room temperature	reactivity compared with that of iodine
A	gas	less reactive
B	solid	less reactive
C	gas	more reactive
D	solid	more reactive

30 The diagram shows an outline of part of the Periodic Table.



Which statement about elements X, Y and Z is **not** correct?

- A** All are metals.
- B** All conduct electricity.
- C** All form coloured compounds.
- D** All react with oxygen.

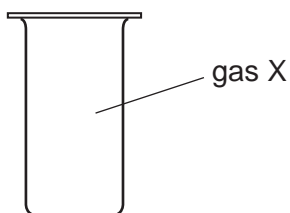
31 The table shows some properties of two elements in Group VII of the Periodic Table.

element	state at 20 °C	density /g per cm ³	melting point /°C
chlorine	gas	0.0032	-101
bromine	liquid	3.1	-7

Which properties is fluorine likely to have?

	state at 20 °C	density /g per cm ³	melting point /°C
A	gas	0.0017	-220
B	gas	0.17	-188
C	liquid	0.0017	-220
D	liquid	0.17	-188

32 X is a monatomic gas.



Which statement about X is correct?

- A** X burns in air.
- B** X is coloured.
- C** X is unreactive.
- D** X will displace iodine from potassium iodide.

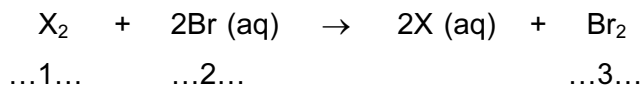
33 The diagram shows a section of the Periodic Table.

	I	II	III	IV	V	VI	VII	0
	V			W			X	
		Y				Z		

Which elements will conduct electricity at room temperature?

- A** V, W and X **B** V, Y and W **C** W, X and Z **D** Y and Z

34 The equation shows the reaction between a halogen and aqueous bromide ions.



Which words correctly complete gaps 1, 2 and 3?

	1	2	3
A	chlorine	brown	colourless
B	chlorine	colourless	brown
C	iodine	brown	colourless
D	iodine	colourless	brown

35 The table compares the properties of Group I elements with those of transition elements.

Which entry in the table is correct?

	property	Group I elements	transition elements
A	catalytic activity	low	high
B	density	high	low
C	electrical conductivity	low	high
D	melting point	high	low

- 39 Astatine is an element in Group VII of the Periodic Table. It has only ever been produced in very small amounts.

What is the best description of its likely properties?

	colour	state	reaction with aqueous potassium iodide
A	black	solid	no reaction
B	dark brown	gas	brown colour
C	green	solid	no reaction
D	yellow	liquid	brown colour

- 40 Which statement describes the trends going down group VII of the Periodic Table?

- A** The boiling point and melting point both decrease.
- B** The boiling point and melting point both increase.
- C** The boiling point decreases but the melting point increases.
- D** The boiling point increases but the melting point decreases.