

03. 0620_w21_qp_21 Q:22

Group VII elements show trends in their physical properties going down the group.

element	X	Y	Z
chlorine	-101	-34	0.003
bromine	-7	59	3.1
iodine	114	184	4.9

Which row shows the missing headings for the properties in the table?

	X	Y	Z
A	density in g/cm ³	boiling point in °C	melting point in °C
B	melting point in °C	boiling point in °C	density in g/cm ³
C	boiling point in °C	density in g/cm ³	melting point in °C
D	boiling point in °C	melting point in °C	density in g/cm ³

04. 0620_w21_qp_21 Q:23

Some properties of two metals, G and H, are shown.

metal G	metal H
the formula of the chloride is GCl	high melting point
reacts with cold water	has more than one oxidation state

Which row about metals G and H is correct?

	metal G	metal H
A	in Group I of the Periodic Table	in Group II of the Periodic Table
B	in Group I of the Periodic Table	transition metal
C	in Group II of the Periodic Table	in Group I of the Periodic Table
D	in Group II of the Periodic Table	transition metal

08. 0620_m20_qp_22 Q:25

Sodium is a Group I metal.

Which property, that is typical of most metals, is **not** shown by sodium?

- A conductor of heat
 - B high melting point
 - C malleable
 - D shiny
-

09. 0620_p20_qp_20 Q:27

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

What are the likely properties of astatine?

	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

10. 0620_s20_qp_22 Q:22

Which statement about Group I and Group VII elements is correct?

- A Group VII elements are monoatomic non-metals.
 - B Lithium is more reactive with water than caesium.
 - C The melting points of Group I metals increase down the group.
 - D Potassium bromide reacts with chlorine to produce an orange solution.
-

9.3. GROUP PROPERTIES

11. 0620_s20_qp_23 Q:22

The elements in Group I include lithium, sodium and potassium.

Which statements about these elements are correct?

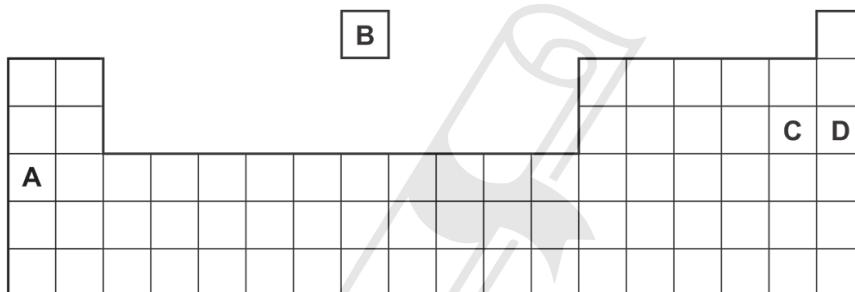
- 1 Sodium is denser than lithium.
- 2 Lithium has a lower melting point than potassium.
- 3 Potassium is a relatively soft metal.
- 4 Sodium is less reactive than lithium but more reactive than potassium.

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

12. 0620_w20_qp_21 Q:26

The positions of four elements in the Periodic Table are shown.

Which element is a gas that displaces iodine from sodium iodide?



13. 0620_w20_qp_22 Q:26

A new element oxfordium, Ox, was discovered with the following properties.

solubility	electrical conduction	formula of element	bonding in a molecule of Ox ₂
insoluble in water	doesn't conduct	Ox ₂	Ox≡Ox

In which group of the Periodic Table should the new element be placed?

- A Group III
- B Group V
- C Group VII
- D Group VIII

14. 0620_w20_qp_23 Q:25

Which statement about the halogens and their compounds is correct?

- A** The colour of the element gets lighter going down Group VII.
- B** The elements get less dense going down Group VII.
- C** When chlorine is added to sodium iodide solution, iodine is formed.
- D** When iodine is added to sodium bromide solution, bromine is formed.

15. 0620_w20_qp_23 Q:26

Elements in Group II of the Periodic Table show the same trends in their reaction with water and their density as Group I.

Which row shows how the properties of barium compare with calcium?

	reaction with water	density
A	faster	higher
B	faster	lower
C	slower	higher
D	slower	lower



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16. 0620_m19_qp_22 Q:25

Astatine is below iodine in Group VII in the Periodic Table.

Which row describes the properties of astatine?

	state at room temperature	reactivity
A	gas	displaces chlorine, bromine and iodine
B	gas	displaces iodine but does not displace chlorine or bromine
C	solid	displaces iodine but does not displace chlorine or bromine
D	solid	does not displace chlorine, bromine or iodine

9.3. GROUP PROPERTIES

17. 0620_s19_qp_21 Q:20

The properties of an element are shown.

electrical conductivity	density	reaction with water
high	low	reacts violently with cold water

Which element has these properties?

	A																		
							C												
D																			

18. 0620_s19_qp_21 Q:21

Which statement about elements in Group I and Group VII of the Periodic Table is correct?

- A Bromine reacts with potassium chloride to produce chlorine.
- B Iodine is a monatomic non-metal.
- C Lithium has a higher melting point than potassium.
- D Sodium is more reactive with water than potassium.

19. 0620_s19_qp_22 Q:21

The melting points and boiling points of the elements of Group I of the Periodic Table are shown.

element	melting point /°C	boiling point /°C
lithium	181	1330
sodium	98	883
potassium	63	759
rubidium	39	688
caesium	28	671

Which pair of elements are liquid at 800 °C?

- A caesium and rubidium
- B potassium and sodium
- C lithium and sodium
- D potassium and caesium

20. 0620_s19_qp_23 Q:21

Which statement about the properties of elements in Group I and in Group VII is correct?

- A Bromine displaces iodine from an aqueous solution of potassium iodide.
 - B Chlorine, bromine and iodine are diatomic gases at room temperature.
 - C Lithium, sodium and potassium are soft non-metals.
 - D Lithium, sodium and potassium have an increasing number of electrons in their outer shells.
-

21. 0620_w19_qp_21 Q: 24

Which pair of elements reacts together most violently?

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

22. 0620_w19_qp_22 Q: 24

Which pair of elements reacts together most violently?

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

23. 0620_w19_qp_23 Q: 24

Which pair of elements reacts together most violently?

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

9.3. GROUP PROPERTIES

24. 0620_m18_qp_22 Q: 21

The Periodic Table lists all the known elements.

Elements are arranged in order of 1 number.

The melting points of Group I elements 2 down the group.

The melting points of Group VII elements 3 down the group.

Which words correctly complete gaps 1, 2 and 3?

	1	2	3
A	nucleon	decrease	increase
B	nucleon	increase	decrease
C	proton	decrease	increase
D	proton	increase	decrease

25. 0620_m18_qp_22 Q: 22

Metal X reacts with non-metal Y to form an ionic compound with the formula X_2Y .

Which statements are correct?

- 1 X is in Group I of the Periodic Table.
- 2 X is in Group II of the Periodic Table.
- 3 Y is in Group VI of the Periodic Table.
- 4 Y is in Group VII of the Periodic Table.

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

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26. 0620_m18_qp_22 Q: 23

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

9.3. GROUP PROPERTIES

30.0620_w18_qp_21 Q:21

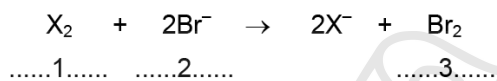
Elements in Group I of the Periodic Table react with water.

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

31.0620_w18_qp_21 Q:22

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



Which words 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

32.0620_m17_qp_22 Q:23

Magnesium, calcium, strontium and barium are Group II elements.

Group II elements follow the same trends as Group I elements.

Which statements about Group II elements are correct?

- 1 Calcium reacts faster than magnesium with water.
- 2 Barium reacts less vigorously than magnesium with dilute acid.
- 3 Strontium oxidises in air more slowly than barium.

A 1, 2 and 3 **B** 1 and 2 only **C** 1 and 3 only **D** 2 and 3 only

33. 0620_s17_qp_21 Q: 22

Which element is less reactive than the other members of its group in the Periodic Table?

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

34. 0620_s17_qp_21 Q: 23

The elements in Group IV of the Periodic Table are shown.

carbon
silicon
germanium
tin
lead
flerovium

What does **not** occur in Group IV as it is descended?

- A The proton number of the elements increases.
 - B The elements become more metallic.
 - C The elements have more electrons in their outer shells.
 - D The elements have more electron shells.
-

35. 0620_s17_qp_22 Q: 23

The elements oxygen and sulfur are in the same group of the Periodic Table.

Which statement about oxygen and sulfur is **not** correct?

- A They are non-metals.
 - B They have giant covalent structures.
 - C They have six electrons in their outer shells.
 - D They react together to form an acidic oxide.
-

9.3. GROUP PROPERTIES

36. 0620_s17_qp_23 Q: 23

Ununseptium (atomic number 117) is a man-made element that is below astatine in Group VII of the Periodic Table.

What is the expected state of ununseptium at room temperature?

- A a diatomic gas
 - B a liquid
 - C a monatomic gas
 - D a solid
-

37. 0620_w17_qp_21 Q: 22

Astatine is an element in Group VII of the Periodic Table.

Astatine is1..... reactive than iodine.

The melting point of astatine is2..... than the melting point of iodine.

Astatine is3..... in colour than bromine.

Which words complete gaps 1, 2 and 3?

	1	2	3
A	less	higher	darker
B	less	lower	lighter
C	more	higher	darker
D	more	lower	lighter

38. 0620_w17_qp_22 Q: 22

Sodium and rubidium are elements in Group I of the Periodic Table.

Which statement is correct?

- A Sodium atoms have more electrons than rubidium atoms.
 - B Sodium has a lower density than rubidium.
 - C Sodium has a lower melting point than rubidium.
 - D Sodium is more reactive than rubidium.
-

39. 0620_w17_qp_23 Q: 22

Some properties of element X are shown.

melting point in °C	98
boiling point in °C	883
reaction with cold water	gives off H ₂ gas
reaction when heated with oxygen	burns to give a white solid

In which part of the Periodic Table is X found?

- A Group I
- B Group VII
- C Group VIII
- D transition elements

40. 0620_m16_qp_22 Q: 22

An element does not conduct electricity and exists as diatomic molecules.

Where in the Periodic Table is the element found?



41. 0620_m16_qp_22 Q: 24

The elements in a group of the Periodic Table show the following trends.

- 1 The element with the lowest proton number has the lowest reactivity.
- 2 All the elements in the group form basic oxides.
- 3 The density of the elements increases down the group.
- 4 The melting point of the elements decreases down the group.

In which group are the elements found?

- A I
- B IV
- C VI
- D VII

9.3. GROUP PROPERTIES

42. 0620_p16_qp_20 Q: 27

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

What are the likely properties of astatine?

	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

43. 0620_s16_qp_21 Q: 22

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.

44. 0620_s16_qp_22 Q: 22

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, $RbCl$.

45. 0620_s16_qp_23 Q: 22

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.
-

46. 0620_w16_qp_21 Q: 22

What is **not** a property of Group I metals?

- A They are soft and can be cut with a knife.
- B They react when exposed to oxygen in the air.
- C They produce an acidic solution when they react with water.
- D They react rapidly with water producing hydrogen gas.



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SN	Paper	Q. No.	Answer
01	0620_m21_qp_22	23	A
02	0620_s21_qp_22	23	D
03	0620_w21_qp_21	22	B
04	0620_w21_qp_21	23	B
05	0620_w21_qp_22	12	C
06	0620_w21_qp_22	22	A
07	0620_w21_qp_23	22	D
08	0620_m20_qp_22	25	B
09	0620_p20_qp_20	27	A
10	0620_s20_qp_22	22	D
11	0620_s20_qp_23	22	B
12	0620_w20_qp_21	26	C
13	0620_w20_qp_22	26	B
14	0620_w20_qp_23	25	C
15	0620_w20_qp_23	26	A
16	0620_m19_qp_22	25	D
17	0620_s19_qp_21	20	D
18	0620_s19_qp_21	21	C
19	0620_s19_qp_22	21	C
20	0620_s19_qp_23	21	A
21	0620_w19_qp_21	24	B
22	0620_w19_qp_22	24	B
23	0620_w19_qp_23	24	B
24	0620_m18_qp_22	21	C
25	0620_m18_qp_22	22	A
26	0620_m18_qp_22	23	D
27	0620_s18_qp_21	22	B
28	0620_s18_qp_22	22	C
29	0620_s18_qp_23	22	A
30	0620_w18_qp_21	21	B
31	0620_w18_qp_21	22	B
32	0620_m17_qp_22	23	C
33	0620_s17_qp_21	22	A
34	0620_s17_qp_21	23	C
35	0620_s17_qp_22	23	B
36	0620_s17_qp_23	23	D
37	0620_w17_qp_21	22	A
38	0620_w17_qp_22	22	B
39	0620_w17_qp_23	22	A
40	0620_m16_qp_22	22	C
41	0620_m16_qp_22	24	A
42	0620_p16_qp_20	27	A
43	0620_s16_qp_21	22	C
44	0620_s16_qp_22	22	A
45	0620_s16_qp_23	22	A
46	0620_w16_qp_21	22	C