

1 Which property shows an increasing trend in the elements, from Group I to Group VII, across a period of the Periodic Table?

- A ability to form anions
- B metallic character
- C number of electron shells
- D reactivity with water

2 The melting point of lithium is 181 °C. The melting point of sodium is 98 °C.

Which statement explains why lithium has a higher melting point than sodium?

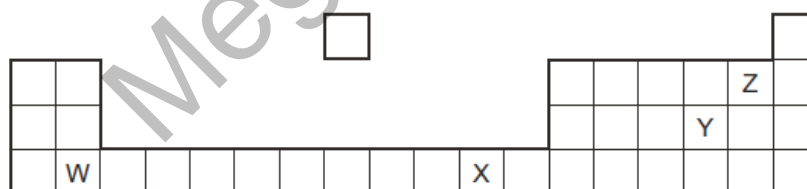
- A Lithium has more valency electrons than sodium.
- B Sodium is more reactive than lithium.
- C Sodium is softer than lithium.
- D The attraction between the positive ions and the 'sea of electrons' is stronger in lithium than in sodium.

3 From their position in the Periodic Table, which properties would you expect the elements vanadium, chromium and cobalt to have?

- 1 variable oxidation states
- 2 coloured compounds
- 3 high melting points

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

4 The diagram shows part of the Periodic Table.



Which two letters represent elements that can react together to form covalent compounds?

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

**Periodic Table MCQS**

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- 5 The Group I metals lithium, sodium and potassium show trends in their melting points and in their reactions with water.

Which statement is correct going down the group from lithium to potassium?

- A Their melting points decrease and their reaction with water becomes less vigorous.
- B Their melting points decrease and their reaction with water becomes more vigorous.
- C Their melting points increase and their reaction with water becomes less vigorous.
- D Their melting points increase and their reaction with water becomes more vigorous.

- 6 From their position in the Periodic Table, which properties would you expect the elements vanadium, chromium and cobalt to have?

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- 7 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

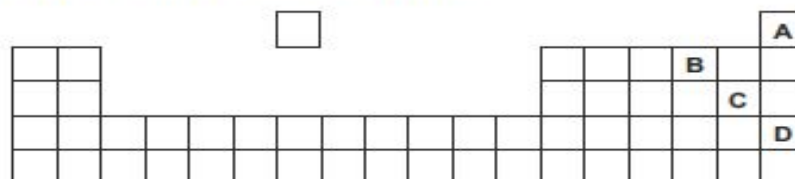
Which information about iodine completes the table?

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

- 8 The diagram shows a section of the Periodic Table.

Which element is described below?

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

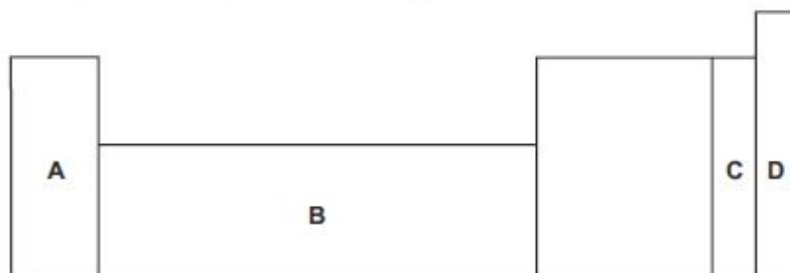


- 9 Which is **not** a characteristic property of transition metals?

- A act as catalysts
- B form coloured compounds
- C high melting point
- D low density

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

Where in the Periodic Table is the element found?



- 11 In the Periodic Table, how does the metallic character of the elements vary from left to right across a period?

- A It decreases.
- B It increases.
- C It increases then decreases.
- D It stays the same.

- 12 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

- 13 Which element is a transition metal?

	melting point in °C	density in g/cm <sup>3</sup>	colour of oxide
A	98	1.0	white
B	328	11.3	yellow
C	651	1.7	white
D	1240	7.4	black

14 Which property of elements increases across a period of the Periodic Table?

- A metallic character
- B number of electron shells
- C number of outer shell electrons
- D tendency to form positive ions

15 The noble gases are in Group VIII of the Periodic Table.

Which statement explains why noble gases are unreactive?

- A They all have eight electrons in their outer shells.
- B They all have full outer shells.
- C They are all gases.
- D They are all monoatomic.

16 Which compound is made from elements which are all in the same period?

- A  $Al_2(SO_4)_3$
- B  $C_2H_5OH$
- C  $LiNO_3$
- D  $Na_3AlF_6$

17 Part of the Periodic Table is shown.

Which element is used as a catalyst?

The diagram shows a partial periodic table grid with 4 rows and 18 columns. The elements are arranged as follows:

- Row 1: 2 columns on the left, a gap of 6 columns, and 10 columns on the right.
- Row 2: 2 columns on the left, a gap of 6 columns, and 10 columns on the right.
- Row 3: 18 columns.
- Row 4: 18 columns.

Labels are placed in the following cells:

- B** is in the first cell of Row 2.
- C** is in the 13th cell of Row 2.
- D** is in the 10th cell of Row 3.
- A** is in the 18th cell of Row 1.

18 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

19 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	✓	✗
C	✗	✓
D	✗	✗

20 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.

21 Which trend occurs across the period from sodium to argon?

- A a change from metal to non-metal
- B an increase in melting point
- C a more violent reaction with water
- D an increase in electrical conductivity

22 Why is argon used in lamps?

- A Argon forms molecules when electricity is passed through it.
- B Argon is inert and so does not react with the hot filament.
- C Argon is less dense than air.
- D Argon produces light when it burns.



- 28 Indium (proton number 49) is in Group III of the Periodic Table. Antimony (proton number 51) is in Group V of the Periodic Table.

Which statement comparing indium and antimony is correct?

- A Antimony has more metallic character and more valency electrons per atom than indium.
- B Antimony has more metallic character; indium has more valency electrons per atom.
- C Indium has more metallic character; antimony has more valency electrons per atom.
- D Indium has more metallic character and more valency electrons per atom than antimony.

- 27 The positions of four elements are shown on the outline of part of the Periodic Table.

Which element is a solid non-metal at r.t.p.?

The diagram shows a partial periodic table with the following structure:

- Period 1: 2 boxes.
- Period 2: 8 boxes.
- Period 3: 8 boxes.
- Period 4: 18 boxes.
- Period 5: 18 boxes.

Element positions:

- Element A: Period 3, Group 13.
- Element B: Period 4, Group 15.
- Element C: Period 4, Group 17.
- Element D: Period 5, Group 17.

There is also a small empty box above the transition metal block in Period 4.

- 30 Three elements each show oxidation states of +2 and +3.

To which part of the Periodic Table do these elements belong?

- A Group II
- B Group III
- C Group V
- D transition metals

- 31 The total number of electrons in one atom of element Q is 17 and in one atom of element R is 19.

Which statement about elements Q and R is correct?

- A Q and R react together to form a covalent compound.
- B Q forms positive ions.
- C R has more outer shell electrons than Q.
- D R is more metallic than Q.

32 Which row shows the correct catalyst for each industrial process?

	manufacture of sulfuric acid	manufacture of ammonia	manufacture of margarine
<b>A</b>	nickel	iron	vanadium(V) oxide
<b>B</b>	nickel	vanadium(V) oxide	iron
<b>C</b>	vanadium(V) oxide	iron	nickel
<b>D</b>	vanadium(V) oxide	nickel	iron

33 Which statement about both the Group I and Group VII elements is correct?

- A They conduct electricity when molten.
- B They form covalent compounds when bonded to non-metals.
- C They exist as diatomic molecules.
- D When Group I elements combine with Group VII elements, ionic compounds form.

34 The elements helium, argon and neon are noble gases.

Which statement is correct?

- A All these elements have eight electrons in their outer shell.
- B Argon is used to react with impurities in the manufacture of steel.
- C Helium is used in balloons as it is more dense than air.
- D Neon is used in light bulbs to give an inert atmosphere.



35 The table shows the proton numbers of four elements.

element	Q	R	T	Z
proton number	9	11	17	19

Which statement is correct?

- A Q is a metal.
- B Q is more reactive than T.
- C R is more reactive than Z.
- D T and Z are in the same period.

36 The diagram shows part of the Periodic Table.

Which row about the elements W, X and Y is correct?

	combines with oxygen in the ratio 2:3	exists as single atoms and is chemically unreactive	forms a carbonate which is not decomposed by heating in a Bunsen flame
A	W	X	Y
B	W	Y	X
C	X	W	Y
D	X	Y	W

37 Which pair gives two uses of argon?

- A disinfecting water and in balloons
- B disinfecting water and in light bulbs
- C in balloons and in the manufacture of steel
- D in light bulbs and in the manufacture of steel

38 Element X forms an oxide of formula  $X_2O_5$ .

In which group of the Periodic Table is X likely to be found?

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

39 Element M is a typical transition metal

Which property will it not have?

- A a low melting point
- B coloured compounds
- C good electrical conductivity
- D variable oxidation states

40 An atom of element E forms a white oxide of formula  $EO$ .

What is E?

- A argon
- B calcium
- C copper
- D potassium

41 A lump of element **X** can be cut by a knife.

During its reaction with water, **X** floats and melts.

What is **X**?

- A calcium
- B copper
- C magnesium
- D potassium



46 The table gives the melting points, densities and electrical conductivities of four elements.

Which element is copper?

	melting point in °C	density in g/cm <sup>3</sup>	electrical conductivity
<b>A</b>	-38.9	13.6	good
<b>B</b>	-7.2	3.12	poor
<b>C</b>	97.8	0.97	good
<b>D</b>	1083	8.96	good

47 An atom of an element has eight electrons only.

Which statement about this element is correct?

- A** It forms an ion with two negative charges.
- B** It has a full outer shell of electrons.
- C** It is a metal.
- D** It is in Group VIII of the Periodic Table.

48 Which element described in the table is a transition metal?

	number of oxidation states	coloured compounds	melting point	density
<b>A</b>	one	no	high	low
<b>B</b>	two	no	low	high
<b>C</b>	two	yes	high	high
<b>D</b>	two	yes	low	low

49 Three different elements react by losing electrons. The ions formed all have the electronic configuration 2,8.

Which statement about these elements is correct?

- A** They are in the same group.
- B** They are in the same period.
- C** They are noble gases.
- D** They are transition elements.

- 50 The Periodic Table shows the positions of elements A, B, C and D. These are not the usual symbols of these elements.

Which element has a high melting point and can be used as a catalyst?

I		II										III	IV	V	VI	VII	0	
A															D			
B								C										

Mega Lecture

**Marking Key**

1-A 27-C

2-D 28-C

3-A 29-D

4-D 30-D

5-B 31-D

6-A 32-C

7-C 33-D

8-D 34-D

9-D 35-B

10-C 36-D

11-A 37-D

12-A 38-C

13-D 39-A

14-C 40-B

15-B 41-D

16-C 42-D

17-D 43-D

18-C 44-D

19-D 45-B

20-A 46-B

21-A 47-B

22-B 48-C

23-B 49-B

24-C 50-C

25-A

26-D