

Periodic Table MCQS

- 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.

A partial periodic table showing the following elements highlighted:

- W: 4th period, 1st group (alkali metal)
- X: 4th period, 10th group (transition metal)
- Y: 4th period, 17th group (halogen)
- Z: 4th period, 18th group (noble gas)

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

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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?

- 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

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.'

A simplified periodic table grid with 18 columns and 4 rows. The first two columns are shaded blue. The last column is labeled 'A' at the top. The third column from the right is labeled 'B' at the top, 'C' in the second row, and 'D' in the third row. A small box is located above the 10th column.

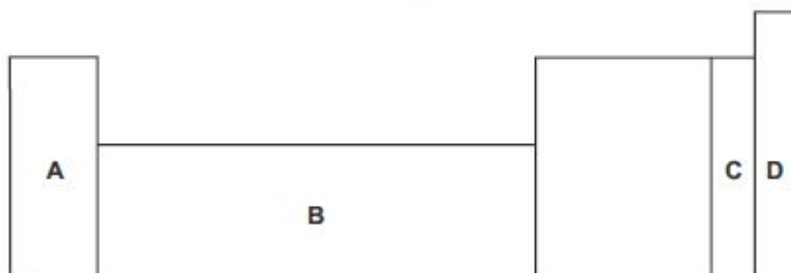
- 9 Which is **not** a characteristic property of transition metals?

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

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- 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 ³	colour of oxide
A	98	1.0	white
B	328	11.3	yellow
C	651	1.7	white
D	1240	7.4	black

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- 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?

A blank periodic table is shown with four specific elements highlighted for labeling:

- A:** Located in the top right corner, corresponding to Helium (He).
- B:** Located in the second row, first column, corresponding to Lithium (Li).
- C:** Located in the third row, 18th column, corresponding to Argon (Ar).
- D:** Located in the fourth row, 11th column, corresponding to Sodium (Na).

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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.

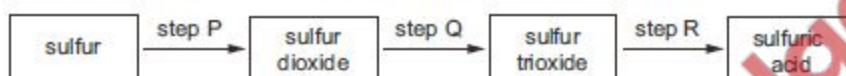
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23 Element X is a non-metal.

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

24 The diagram shows three steps in the manufacture of sulfuric acid.



In which steps is a catalyst used?

- A P, Q and R B Q and R only C Q only D R only

25 Which statement about the elements in the Periodic Table is correct?

- A An atom of potassium, K, has more protons than an atom of argon, Ar.
B Elements in the same period have similar chemical properties.
C Elements that are non-metals form only covalent bonds with other elements.
D On descending Group I from lithium, Li, to caesium, Cs, the metals become less reactive.

26 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.?

27 What is not a typical property of transition elements?

- A They form coloured compounds.
B They have high melting points.
C They have low densities.
D They have variable oxidation states.

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

A simplified periodic table grid is shown. The grid has 4 rows and 10 columns. The elements are labeled as follows:

- Row 1: Empty, Empty, Empty, Empty, Empty, Empty, Empty, Empty, Empty, Empty
- Row 2: Empty, A, Empty, Empty, Empty, Empty, Empty, B, Empty, Empty
- Row 3: Empty, Empty, Empty, Empty, Empty, Empty, Empty, C, Empty, Empty
- Row 4: Empty, Empty, Empty, Empty, Empty, Empty, Empty, D, Empty, Empty

There is an empty box above the grid and a small box to the left of the grid.

- 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.

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

	manufacture of sulfuric acid	manufacture of ammonia	manufacture of margarine
A	nickel	iron	vanadium(V) oxide
B	nickel	vanadium(V) oxide	iron
C	vanadium(V) oxide	iron	nickel
D	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.

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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.

[illegible]

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

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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

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- 42 Some properties which make elements different from each other are listed.
- 1 metallic character
 - 2 number of electron shells in an atom
 - 3 number of protons in an atom
 - 4 total number of electrons in an atom

Which two properties increase across a period of the Periodic Table?

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

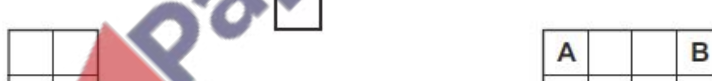
- 43** Which row is a transition element?

	melting point/°C	density in g/cm ³
A	44	1.82
B	181	0.53
C	271	9.75
D	1244	7.20

- 44 Element Z combines with sodium to form the compound Na_2Z .

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

Which is element Z?



The diagram shows a simplified periodic table. A red triangle highlights the first three rows, which are labeled A, B, and C. The first three columns are labeled D, E, and F. The triangle is labeled 'Period' in a large, stylized font.

- 45 From their position in the Periodic Table, which statement is correct?
- A** Atoms of elements in Group VII react to form ions by losing one electron.
- B** Iodine can displace bromine from its salts.
- C** Potassium reacts more rapidly than lithium with water to form the hydroxide and hydrogen.
- D** The melting point of caesium is greater than that of potassium.

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- 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 ³	electrical conductivity
A	-38.9	13.6	good
B	-7.2	3.12	poor
C	97.8	0.97	good
D	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
A	one	no	high	low
B	two	no	low	high
C	two	yes	high	high
D	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?

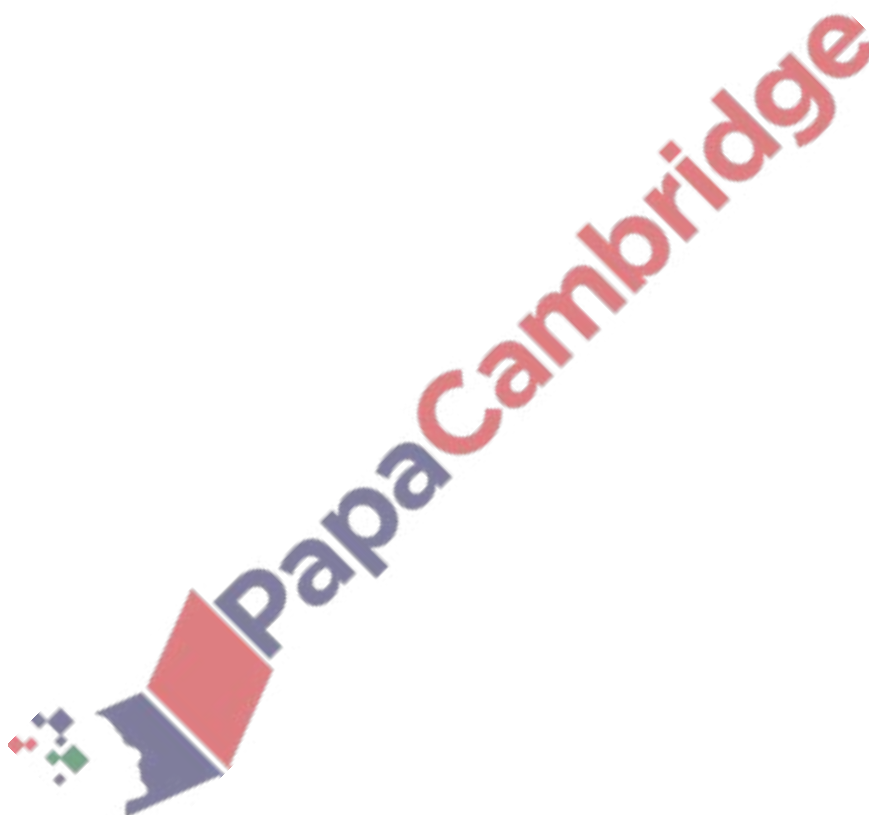
- A** They are in the same group.
- B** They are in the same period.
- C** They are noble gases.
- D** They are transition elements.

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- 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																		
B																		



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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	