# COMPILED BY: MUSTAFA ASIF

1		ich property shows an increasing trend in the elements, from Group I to Group VII, across a riod of the Periodic Table?
	Α	ability to form anions
	В	metallic character
	С	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.
	Wh	nich statement explains why lithium has a higher melting point than sodium?
	Α	Lithium has more valency electrons than sodium.
	В	Sodium is more reactive than lithium.
	С	Sodium is softer than lithium.
	D	The attraction between the positive ions and the 'sea of electrons' is stronger in lithium that in sodium.
3		m their position in the Periodic Table, which properties would you expect the elements nadium, chromium and cobalt to have?  1 variable oxidation states 2 coloured compounds 3 high melting points  1, 2 and 3 B 1 and 2 only C 1 and 3 only D 2 and 3 only
4	1 Th	ne diagram shows part of the Periodic Table.
		Y
	V	Which two letters represent elements that can react together to form covalent compounds?
	A	A Wand X B Wand Y C X and Y D Yand 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
В	liquid	green
С	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.'

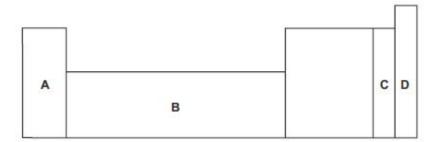
									A
							В		
								C	
									D

- 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 <sup>3</sup>	colour of oxide
A	98	1.0	white
В	328	11.3	yellow
C	651	1.7	white
D	1240	7.4	black

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14	Wh	ich property of	elem	ents increase	s acros	s a period o	f the Per	riodic Table				
	A	metallic chara	acter									
	В	number of ele	ectron	shells								
	С	number of outer shell electrons										
	D	tendency to f	orm p	ositive ions								
15	The	e noble gases	are in	Group VIII of	the Pe	riodic Table.						
	Wh	ich statement	explai	ins why noble	gases	are unreact	ive?					
	A	They all have	eight	electrons in	their ou	ter shells.						
	В	They all have	full o	utershells.								
	С	iney are all g	ases.									
	D	They are all r	nonoa	ntomic.								
16	Wh	ich compound	is ma	de from elem	ents wh	nich are all i	n the sar	me period?				
16		ich compound Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>		de from elem C₂H₅OH		nich are <b>all</b> i		me period? Na <sub>3</sub> A <i>I</i> F <sub>6</sub>				
	A		В	C₂H₅OH								
7 1	A Part o	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	B able is	C₂H₅OH s shown.								
7 1	A Part o	$Al_2(SO_4)_3$ of the Periodic T	B able is	C₂H₅OH s shown.								
7 1	A Part o	$Al_2(SO_4)_3$ of the Periodic T	B able is	C₂H₅OH s shown.				Na <sub>3</sub> A <sub>I</sub> F <sub>6</sub>				
7 1	A Part o	$Al_2(SO_4)_3$ of the Periodic T	B able is	C₂H₅OH s shown.				Na <sub>3</sub> A <sub>I</sub> F <sub>6</sub>				

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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?

13	1	2	3
Α	nucleon	decrease	increase
В	nucleon	increase	decrease
С	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.

90	statement 1	statement 2
Α	~	1
В	✓	×
С	×	~
D	x	x

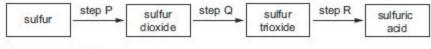
- 20 Which statement describes transition elements?
  - A They have high densities and high melting points.
  - B They have high densities and low melting points.
  - C They have low densities and high melting points.
  - D They have low densities and low melting points.
- 21 Which trend occurs across the period from sodium to argon21
  - 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?

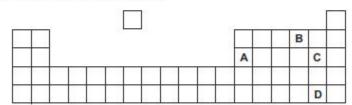
- A at the bottom of Group I
- B at the top of Group 0
- C at the top of Group I
- D in the transition elements
- 24 The diagram shows three steps in the manufacture of sulfuric acid.



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.

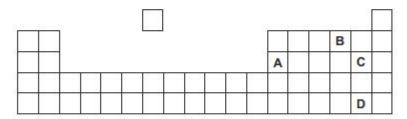
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28 Indium (proton number 49) is in Group III of the Periodic Table. Antimony (proton number 51) is Group V of the Periodic Table.

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.?



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
Α	nickel	iron	vanadium(V) oxide
В	nickel	$vanadium(V) \ oxide$	iron
С	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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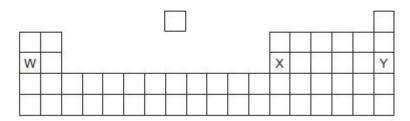
35 The table shows the proton numbers of four elements.

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.



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
Α	W	Х	Y
В	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<sub>2</sub>O<sub>5</sub>.

	In :	which group of the Periodic Table is X likely to be found?
	Α	Group II
	В	Group III
	С	Group V
	D	Group VIII
39	Ele	ement M is a typical transition metal39
	W	nich property will it not have?
	Α	a low melting point
	В	coloured compounds
	С	good electrical conductivity
	D	variable oxidation states
40	An	atom of element E forms a white oxide of formula EO.
	WI	nat is E?
	Α	argon
	В	calcium
	С	copper
	D	potassium
А	lui	mp of element <b>X</b> can be cut by a knife.
		ing its reaction with water, <b>X</b> floats and melts.
V	Vha	at is X?
-		calcium
E	3	copper
C	:	magnesium
	•	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

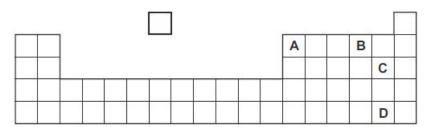
43 Which row is a transition element?

	melting point/°C	density in g/cm <sup>3</sup>
Α	44	1.82
В	181	0.53
С	271	9.75
D	1244	7.20

44 Element Z combines with sodium to form the compound Na2Z.

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

Which is element Z?



- 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 lodine 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 <sup>3</sup>	electrical conductivity
A	-38.9	13.6	good
В	-7.2	3.12	poor
С	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
В	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?

1 1				111	IV	V	VI	VII	0
Α						D		2	
	(	;						85	
В									
	- 12 - 12 -								

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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 47-B 21-A 22-B **48-C** 23-B 49-B **24-**C **50-**C 25-A

**26-D**