

O Level Pure Chemistry MCQs

Chemical Bonding Test 5.0

Q1

The structure of Silica, SiO_2 is similar to that of diamond.

In the structure of solid SiO_2 ,

- each silicon atom is bonded to X oxygen atoms
- each oxygen atom is bonded to Y silicon atoms
- each bond is a Z type bond

Which of the following corresponds to X, Y and Z?

	X	Y	Z
A	2	1	covalent
B	2	1	ionic
C	4	2	covalent
D	4	2	ionic

Q2

In which molecule are all the outer electrons of the atoms involved in bonding?

- A CH_4
- B HF
- C H_2O
- D NH_3

Q3

Potassium and iron are found in the same period in the Periodic Table.

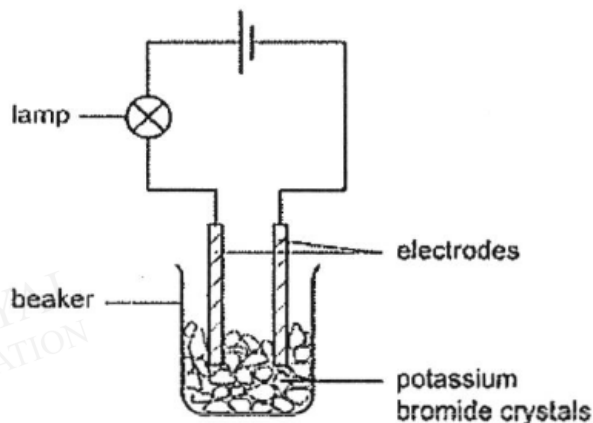
	melting point / °C	boiling point / °C
Potassium	64	759
Iron	1538	2862

Which of the following statements explain the difference between the melting and boiling point of these two elements?

- A Potassium and iron have different types of bonding.
- B The electrostatic forces of attraction are stronger in iron.
- C The ionic bonds in iron is stronger than those in potassium.
- D The relative atomic mass of iron is greater than potassium.

Q4

A student conducted an experiment on potassium bromide crystals.



Initially, the lamp does not light up

After some distilled water was added into the beaker, the lamp lights up.

Which statement explains these results?

- A Electrons are free to move in the solution when potassium bromide dissolves.
- B Oppositely charged ions are free to move when potassium bromide melts.
- C Oppositely charged ions are free to move in the solution when potassium bromide dissolves.
- D Oppositely charged ions are free to move when potassium reacts with water to form potassium hydroxide.

Q5

Which statements apply to both diamond and graphite?

- I: contains only carbon atoms
- II: covalently bonded to other atoms
- III: giant molecular structure

- A I and II only
- B I and III only
- C II and III only
- D I, II and III

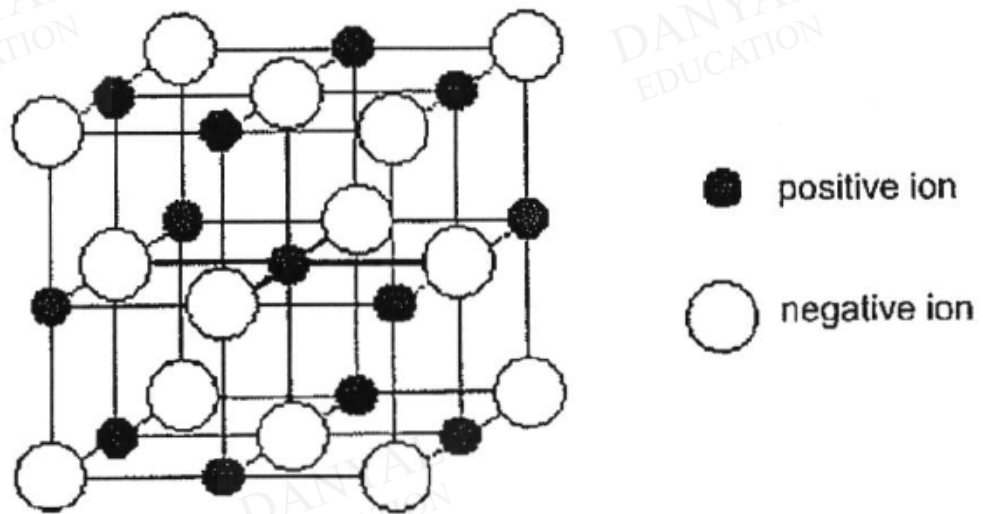
Q6

The hydrogen atom can form ionic bonds with element Y. What could be element Y?

- A calcium
- B chlorine
- C nitrogen
- D sulfur

Q7

The diagram shows the arrangement of ions in an ionic crystal.



Which compound **cannot** have this arrangement of its ions?

- A calcium oxide, CaO
- B copper (II) sulfate, CuSO_4
- C iron (II) chloride, FeCl_2
- D zinc carbonate, ZnCO_3

Q8

Which feature of calcium's structure is responsible for conduction of electricity?

- A It has a lattice of positive ions.
- B Its positive ions attract electrons.
- C It is made up of free-moving positive and negative ions.
- D It contains a 'sea of valence electrons'.

Q9

The table shows the number of protons, neutrons and electrons in particle S, T, U and V.

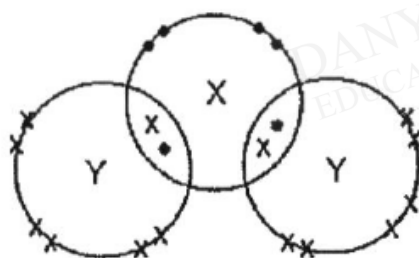
particle	S	T	U	V
proton	17	17	20	20
neutron	20	18	20	21
electron	17	18	18	20

Which one of the following pairs of particles combine to give an ionic solid?

- A S and T
- B S and U
- C T and U
- D T and V

Q10

The diagram shows the arrangement of electrons in the outer shells of the atoms in the compound XY_2 . What elements could X and Y be?



- electron of X atom
- x electron of Y atom

	X	Y
A	calcium	fluorine
B	carbon	sulfur
C	oxygen	hydrogen
D	sulfur	chlorine

Answers

Chemical Bonding Test 5.0

Q1 C

Q2 A

Q3 B

Q4 C

Q5 D

Q6 A

Q7 C

Q8 D

Q9 C

Q10 D

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