O Level Pure Chemistry MCQs

Chemical Bonding Test 3.0

Q1

Carbon disulfide is a simple covalent compound used in manufacturing polymers and fibres.

A student made the following statements:

- Carbon disulfide has a low boiling point.
- Carbon disulfide has good electrical conductivity when molten.
- Carbon disulfide is very soluble in water.
- Carbon disulfide is a crystalline solid at room temperature.

How many statement(s) is/are correct about the compound?

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

Q2

Which one of the following sets of solid elements includes a giant metallic structure, a macromolecular structure and a simple molecular structure?

A	Al	Mg	Si
B	Al	Si	S
C	C	Si	Sn
D	Si	P	S

Q3

Which compound contains both ionic and covalent bonds?

A ammonia

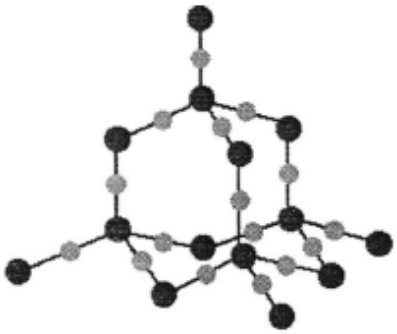
B ethyl ethanoate

C potassium nitrate

D sodium chloride

Q4

The diagram below shows part of the structure of silicon carbide.

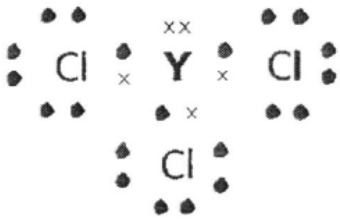


Which row correctly shows the properties of silicon carbide?

	electrical conductivity	when heated strongly in oxygen
A	good	burns, giving a solid residue only
B	good	burns, leaving no solid residue
C	poor	burns, giving a solid residue only
D	poor	burns, giving a solid residue and a colourless gas

Q5

The electronic structure of a compound formed between an element Y and chlorine is shown below (only valence electrons are shown).



What is the chemical formula when sodium combines with element Y?

A Na_2Y
B NaY_2
C Na_3Y
D Na_5Y

Q6

An element Z has the electronic structure 2,4.
Z combines with chlorine to form a compound that is most likely a

A good conductor of electricity in liquid.
B liquid with a simple molecular structure.
C solid that dissolves in water.
D solid with a giant ionic crystal lattice structure.

Q7

Which substance has metallic bonding?

substance	electrical conductivity		nature of product formed by reaction between substance and oxygen
	when solid	when liquid	
A	×	√	no reaction
B	×	×	reacts with alkali
C	√	√	reacts with both alkali and acid
D	√	√	does not react with alkali nor acid

Q8

Which one of the following represents the most likely structural formula for the covalent compound disulfur dichloride, S_2Cl_2?

A Cl–S–S–Cl

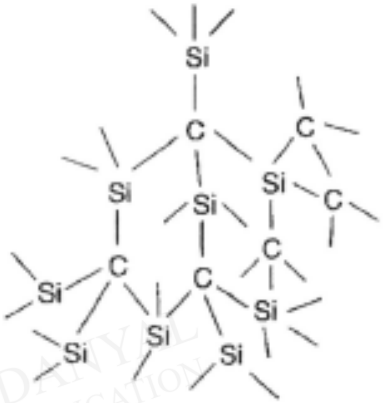
B S–Cl–Cl–S

C S–Cl–S–Cl

D Cl=S–S=Cl

Q9

The diagram shows part of the structure of the compound silicon carbide.

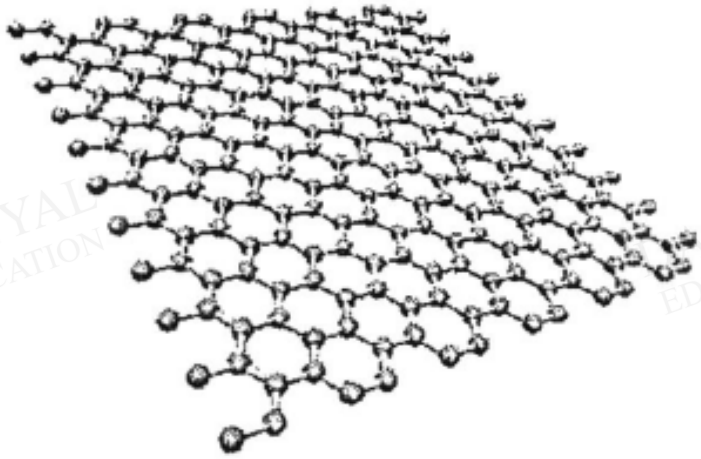


Which set of information about silicon carbide is correct?

	empirical formula	*when strongly heated in oxygen*
A	SiC	burns, giving a solid residue only
B	SiC	burns, giving a solid residue and a colourless gas
C	Si_2C	burns, leaving no solid residue
D	SiC_2	burns, giving a solid residue and a colourless gas

Q10

Graphene is made from graphite.
Graphene contains only one layer of carbon atoms.



How does graphene differ from graphite?

A Graphene does not conduct electricity.
B Graphene is harder.
C Graphene has a low melting point.
D Graphene burns to form carbon dioxide.

Answers

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Q1 A

Q2 B

Q3 C

Q4 D

Q5 C

Q6 B

Q7 C

Q8 A

Q9 B

Q10 B