



Describe the structure of a pure metal (3)

Q-1

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Describe the structure of an alloy (3)

Q-2

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Describe the structure and bonding in a thermosetting polymer (2)

Q-3

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Describe the structure and bonding in a thermosoftening polymer (2)

Q-4

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Describe the bonding in a simple covalent compound (3)

Q-5

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Using an example describe the properties of a simple covalent compound (3)

Q-6

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- Alloys are hard
- Different sized atoms lead to distorted layers
- These layers cannot slide

A-2

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- pure metals are soft
- the atoms are arranged in layers
- these layers can slide over each other

A-1

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- melt
- polymer chains not held together

A-4

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- burn
- polymer chain held together by crosslinks

A-3

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- oxygen gas, water, carbon dioxide, methane, chlorine gas
- low boiling /melting point
- does not conduct electricity

A-6

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- weak intermolecular bonds
- that don't require much energy to separate them
- so low boiling. melting point

A-5

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Describe the bonding
in a giant covalent
compound (3)

Q-7

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Using an example describe
the properties of giant
covalent compound (3)

Q-8

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What is the difference in
bonding between diamond
and graphite? (3)

Q-9

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Describe and explain
the properties of
graphite (4)

Q-10

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What is the difference
between ionic and
covalent bonding? (4)

Q-11

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Describe the bonding
in an ionic compound
(6)

Q-12

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- silicon dioxide or diamond
- hard / solid at room temperature
- high melting / boiling point
- does not conduct electricity

A-8

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- large structure
- strong bonds
- no free ions

A-7

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- because graphite only makes 3 carbon-carbon bonds
- it has a 'spare' electrons which floats between the layers. This allows for electricity to be conducted
- the atoms are arranged in layers
- graphite is soft because these layers can slide

A-10

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- both are made from pure carbon
- diamond makes 4 carbon-carbon bonds
- Graphite makes 3 carbon-carbon bonds

A-9

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IF THEY GIVE YOU A NAMED EXAMPLE IN THE EXAM QUESTION YOU MUST REFER TO IT, GIVING NUMBER OF ELECTRONS CHARGES OF IONS AND OVERALL FORMULA OF IONIC COMPOUNDS

- -the metal lose x number of electrons
- -and becomes a x positive ion
- The non-metal gain x number of electrons
- -becoming a x negative ions
- They now both have full outer shells
- Give formula of compound

A-12

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- ionic bonding is between a metal and a non-metal
- ionic bonding is the transfer of electrons
- covalent bonding is between two non-metals
- covalent bonding is the sharing of electrons

A-11

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Describe the
properties of an
ionic compound (2)

Q-13

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Describe how a metal
conducts electricity
(2)

Q-14

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Blank

Q-15

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Q-16

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Q-17

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Blank

Q-18

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-in a metal positive ions sit in a sea of free delocalised electrons
-these electrons can move freely, thus conducting electricity

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-high melting and boiling points
-only conduct electricity when molten or dissolved

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A-17

