

Activity 3 – Chemistry

Paper 1C, Q7c

(c) State why diamond is hard but graphite is soft.

(2)

~~The~~ The intermolecular forces between the particles of diamond are stronger.

(c) State why diamond is hard but graphite is soft.

(2)

diamond have 1000's of strong covalent bonds between the carbon atoms, each carbon atom is bonded with 4 other carbon atoms, Graphite has weak intermolecular force between the layers meaning they can slide over each other = malleable.

(Total for Question 7 = 6 marks)

(2)

~~an~~ Graphite has layers that can slide over each other. Therefore it is soft. However diamond doesn't have layers that slide over each other. So it is hard.

(3)

because as the experiment happens, the amount of magnesium decreases so therefore the surface area decreases. This is the rate decreases because the smaller the surface area, the less slow the rate of the reaction because less magnesium ~~exposed~~ is exposed to the acid which means there are less collisions per second and less successful collisions per second

energy (3)

Because there are lower ~~concentrations~~ ^{energy} in the other experiments, there would be been less ~~fruitful~~ and frequent ~~collisions~~ taking place. Magnesium goes from a solid to an aqueous. Magnesium ~~is~~ and hydrogen goes from being an aqueous to a gas showing that it has lost energy throughout the experiment reducing the rate of reaction.

(Total for Question 13 = 12 marks)

(3)

As the number of hydrogen ions (H^+) decreases over the course of the reaction (as they react with ~~the~~ magnesium), fewer successful collisions between magnesium and hydrogen ions occur, thus ~~slowing~~ decreasing the rate of reaction.