Infinity and Beyond LOs for Revision

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| Question | Answer |
| 1. The fossil fuels are useful reserves of fuel and are used to | Satisfy the demands of an energy – dependent world. |
| 1. Fossil fuels are so named because | they originate from the decayed and fossilised remains of plants and animals that lived millions of years ago. |
| 1. Fossil fuels are finite resources. This means | there is a limited supply so they will eventually run out. |
| 1. Viscosity is the thickness or stickiness of a liquid. A sticky liquid has | a high viscosity. |
| 1. Flammability is how easily a substance burns. Something which burns easily | is very flammable. |
| 1. Volatility is how easily a liquid forms a vapour. If a vapour forms easily | the liquid is volatile. |
| 1. The viscosity increases and the volatility and flammability decrease as | the size of the molecules increases. |
| 1. Longer molecules are heavier and have stronger forces between them (more ‘tangled’) so they require more | energy to move and separate them. |
| 1. Crude oil is separated into useful fractions by fractional distillation which involves | evaporation and condensation |
| 1. A fraction is a mixture of hydrocarbons with | boiling points within a given range. |
| 1. Melting is the change of state from solid to liquid. The melting point is a measure of | the energy needed to move and separate the molecules. |
| 1. Evaporation is the change of state from liquid to gas. The boiling point is the temperature at which | this happens quickly and is a measure of the energy needed to move and separate the molecules. |
| 1. Hydrocarbons burn in a plentiful supply of oxygen to produce | carbon dioxide and water. |
| 1. Carbon dioxide is the only gas which | turns limewater cloudy. This is the test for carbon dioxide. |
| 1. Water turns cobalt chloride | from blue to pink. This is the test for water. |
| 1. Carbon dioxide is a greenhouse gas which | contributes to global warming. |
| 1. Incomplete combustion of a fuel occurs if there is | a limited supply of oxygen. |
| 1. Carbon monoxide, a poisonous gas, and carbon (soot) are produced when | hydrocarbons burn in a limited supply of oxygen – they are products of incomplete combustion. |
| 1. Carbon monoxide is a colourless, odourless gas which | is very toxic. |
| 1. Carbon dioxide, sulphur dioxide and oxides of nitrogen are produced as a result of our continued use of fossil fuels. The increased production of these oxides is linked to | environmental problems including acid rain, global warming and ocean acidification. |
| 1. Sulphur dioxide is produced when coal burns due to | the presence of sulphur in coal. |
| 1. Nitrogen dioxide is produced in car engines when nitrogen and oxygen from | air combine together. |
| 1. In engines, catalytic converters can be used to minimise the output of | carbon monoxide, nitrogen dioxide and unburned hydrocarbon vapours. |
| 1. The metal catalysts used in catalytic converters are | Platinum and Rhodium |
| 1. The catalyst has a network structure to | provide a big surface area for faster reactions. |
| 1. The term lean burn engine describes an engine with an | increased air to fuel ratio. |
| 1. This reduces carbon monoxide and unburned hydrocarbons emissions but increases | carbon dioxide and nitrogen dioxide emissions. |
| 1. Crude oil and natural gas contain | mixtures of hydrocarbons. |
| 1. The alkanes are a subset of hydrocarbons which fit the general formula | CnH2n+2 and are identified from the ‘-ane’ ending. |
| 1. The alkenes are also a subset of hydrocarbons which fit the general formula | CnH2n. |
| 1. An alkene can be identified from the | carbon-to-carbon double bond and ‘-ene’ ending. |
| 1. Hydrocarbons are insoluble in water so | are neutral (pH=7). |
| 1. Alkenes react with bromine water in an addition reaction. The colour of the bromine water changes | from yellow to colourless. |
| 1. Cracking is a process used to | meet the demand for shorter chain alkanes and alkenes. |
| 1. Plastics are long-chain molecules called polymers and can be made from | alkenes by a process called polymerisation. |
| 1. Plastics are made from | small units called monomers. |
| 1. The polymer is named by adding the | prefix ‘poly’ to the name of the monomer. |
| 1. Plastics can be grouped in two ways: | thermosoftening and thermosetting plastics |
| 1. Thermosoftening plastics or thermoplastics can be | reshaped once heated whereas thermosetting polymers cannot. |
| 1. Plastics burn to release | harmful gases. Plastics have been developed which can biodegrade. |