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. |