

Name: _____ () Class: _____ Date: _____

An Introduction to Organic Chemistry

Organic Compounds

1. All organic compounds contain _____. Most of them contain _____.
2. Organic compounds that contain only hydrogen and carbon are called _____.
3. Some organic compounds may also contain _____, _____ and _____.

Homologous Series

1. A homologous series is a _____ of organic compounds with the same _____ and similar _____ properties.
2. A _____ is an atom or group of atoms that gives a molecule its _____ properties.
3. Complete the table.

Homologous series	Functional group
alkanes	
alkenes	
alcohols	
carboxylic acids	

4. Organic compounds in the same homologous series have the same _____ and similar _____ properties.
5. They also show a _____ change in their _____ properties down the series.

Naming Organic Compounds

1. The name of an organic compound can be divided into two parts.
- (a) The prefix shows the number of _____ atoms in each molecule.
- (b) The suffix shows the _____ that the compound belongs to.
- (c) Complete the tables below.

Prefix	Number of carbon atoms
meth-	
eth-	
prop-	
but-	

Suffix	Homologous series
-ane	
-ene	
-ol	
-oic acid	

2. Complete the following table.

Number of carbon atoms	Alkane	Alkene	Alcohol	Carboxylic acid
1	methane	–	methanol	
2	ethane	ethene		
3	propane			propanoic acid
4	butane	butene		butanoic acid

Petroleum and Natural Gas

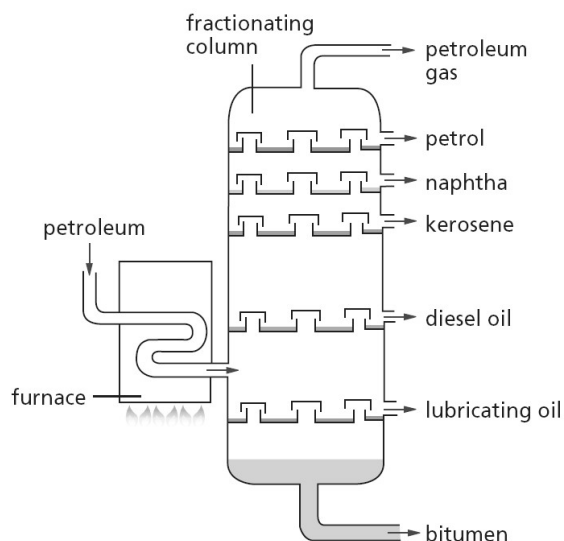
Formation of Petroleum and Natural Gas

1. Petroleum and natural gas are sources of _____.
2. Petroleum (also called _____) is a _____ occurring mixture of hydrocarbons (mainly _____).
3. Natural gas is mostly made up of _____ and other _____.
4. Petroleum and natural gas are examples of _____ which are formed from the remains of plants and animals which died _____ ago.

Fractional Distillation of Petroleum

1. Petroleum is separated into _____ by _____.
2. Each fraction is a mixture of _____ which boils over a certain temperature range.
3. A lighter fraction contains _____ carbon atoms and has a _____ boiling point range than a heavier fraction.

4.



- (a) In the furnace, petroleum is heated into a _____.
- (b) The vapour is passed into the _____.
- (c) The vapour _____ and _____ as it rises up the column.
- (d) _____ hydrocarbons with _____ boiling points are collected at the _____ of the column.
- (e) _____ hydrocarbons with _____ boiling points are collected at the _____ of the column.

Uses of Petroleum Fractions

Fraction	Use
petroleum gas	fuel for _____ and _____
petrol	fuel for _____
naphtha	feedstock (_____) for the _____ industry
kerosene	fuel for _____, cooking and heating
diesel oil	fuel for engines in _____
lubricating oil	for lubricating _____; for making _____ and polishes
bitumen	for paving _____; for _____

Competing Uses of Petroleum

1. Petroleum is used mainly as a _____. It is also used as _____ for the petrochemical industry which produces _____, _____, medicines and so on.
2. Petroleum is a _____ resource. Its supply is _____.
3. It is necessary to _____ petroleum in order to meet its _____ competing uses.
4. Alternative fuels include biofuel (e.g. _____ and _____) and gasohol (a mixture of _____ and _____).