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FOSSIL FUELS

Fossil fuels are natural fuels such as coal & crude oil formed from ē anaerobic decay of dead plants & animals that lived million years ago.

These are used as a source ō fuel. These organisms decompose under high temperature & pressure over a period of million years and were converted to crude oil, coal and natural gas. This process ō decay occured in deep layers inside the earth. Crude oil is also known as petroleum. The word petroleum is derived from ē latin words "petrol" which means "rock" and "leum" which means "oil"

PETROLEUM

Petroleum is a dark brown or greenish viscous inflammable liquid made up of a complex mixture of several hydrocarbons.

Types of Fossil Fuels

They are mainly three different types of fossil fuels i.e

- Natural gas
- Oil / Crude oil
- Natural coal

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Fossil fuel defines ē way they are formed however fossil fuels have many physical & chemical properties in common include:
- All are natural resources
- All are sources of energy
- All are non-renewable

Fuel: This is a substance that produces energy in form of heat, light or electricity.

Coal: Is a black rock light solid obtained as a fossil fuel.

Crude oil: Is a thick dark brown or black or green

Natural gas: Is a fossil fuel formed from gradual decomposition of fossils.

Stages of formation of fossil fuels

Plants & animals in ocean

Sand and silt. Plants and animal remains

Sand & silt rocks, oil and gas deposit.

Description

Plants & animals die and become buried at the bottom of the ocean at the bottom of the ocean with layers of sand and silt. After millions of years, and after more and more layers of sand and silt or sediments become deposited on these remains ō organisms and they become buried deeper & deeper. Then these remains become compressed under high pressure and heat due to weight of the layers and are converted into oil and natural gas.

NOTE: Coal informed by the action of heat and pressure on the remains of trees and plants on land over millions of years but crude oil is formed by the action of heat and pressure on ē remains ō sea plants & animals over millions ō years.

Solutions

Qtn) Why do fossil fuels contain carbon?

Fossil fuels form rings and cyclic.

They form long chains.

2 Why are these fuels known as fossil fuels.

They are formed from anaerobic decay of dead plants and animals that lived million years ago.

Why do fossil fuels contain carbon
They are produced from plants and animals which form carbon.

Why are these fuels known as fossil fuels.
Coz they were formed from fossils which ~~were~~ lived a million years ago and decomposed under high heat and pressure.

Why o

HOW FOSSIL FUELS ARE EXTRACTED

There are two main methods of extracting fossil fuels from the ground and these are;

- Mining
- Drilling

Mining: is the extraction of solid fossil fuels from the ground earth e.g coal is extracted by digging underground or scraping from the surface.

Drilling: is a cutting process in which a drill bit is used to cut or enlarge a circular hole in a solid material Crude oil & natural gas can easily be forced to floor to the surface using drilling method.

FOSSIL FUELS AS A SOURCE OF ENERGY

Q(a) Why are fossil fuels used as a source of energy

Ans Fossil fuels are used as a source of energy because of their ability when burnt

- Fossil fuels are also cheap and easy to use.
- This energy may also be in ē form of electricity

Uses of fossil fuels

Uses of crude oil	User of natural gas	Uses of coal
- For generation of electricity - For making fuels for vehicles and jets - For producing many other useful substances / products called petrochemical products like plastics, lubricants, medicines and detergents - For making fertilisers and pesticides	- Used in air conditioning machine - Used a a fuel for cooking in gas stoves and heat in water at home & industries - Used to generate electricity which is used in gold refineries, aluminium and steel industries - For producing fertilisers, dyes, paints	Used as a source of heat energy. - Used for generating electricity - Used in making products like dyes, medicines, soap and napthaleine balls - Used to make explosives, roofing materials and solvents.

Natural Gas

Natural gas which is mainly methane is compressed at high pressure into liquefied form turning into liquid and is transported as Compressed Natural gas. (CNG)

The advantage of using natural gas is that it is less polluting than crude oil, coal, petrol and diesel.

Unlike natural gas, coal consists of elements like S, H and O. These elements are very reactive. This is why coal is highly combustable and also a heavy pollutant

Coal is a cheaper source of fuel than natural gas or crude oil and as a result is used by many countries.

Other uses of fossil fuels

Different Kinds of fuels

- Diesel - Abiation - Propene gas
- Petrol - Paraffin

The benefits of these fuels include:

- For lighting in paraffin candles & paraffin lamps
- For running engines of vehicles, generators.
- For cooking in paraffin cookers and in gas stoves
- For metal smelting & welding
- For tarmacking roads

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The bi-products of crude oil are used to produce various petrochemicals like tar for tarmacking roads, paint, plastics, manufacturing

Match the following

Product of crude oil	Use
Gas	Fuel for home and industry
Petrol	Ointments, candles & vaseline
Bitumen (residue of crude oil)	Motor fuel and aviation fuel
Paraffin wax	Paints and tarmacking roads

Why fossil fuels are regarded as Non-renewable

> Fossil fuels cannot be replaced by natural processes.

NOTE;

When natural resources ~~are~~ like petroleum become depleted (used up) then the future generation cannot be able to benefit from it. This is because such resources cannot be degenerated / produced by any natural processes.

Sustainability

Means using a resource ẽ meet our current needs without compromising ẽ ability õ ẽ future generation to meet their own needs. This means using resources in a way such that they can still be available for use for the future generations

Non-renewable resource

Is a resource that cannot be replaced once used up.

Examples of Non-renewable resources

- Fossil fuels
- Nuclear energy
- Gold
- Copper
- Silver
- Diamond

Why fossil fuels are unsustainable

We cannot use them for a long time