

Board –CBSE

Class –8th

Topic – Coal and Petroleum

- **Natural Resources**

The resources which are obtained from nature, are called as natural resources.

- **Types of Natural Resources**

(a) Inexhaustible Natural Resources

(b) Exhaustible Natural Resources

- **Inexhaustible natural resources**

Resources which are available in large quantities in nature and will not be depleted even after continuous usage are known as Inexhaustible natural resources.

Examples are sunlight, air.

Exhaustible natural resources

Resources which of present in limited amount and can be exhausted by human activities are called exhaustible natural resources.

Examples are coal, petroleum, wildlife, forest, etc.

Fossil Fuels

Some exhaustible natural resources like coal, petroleum, etc. are formed from dead remains of the living organisms. These kinds of resources are known as fossil fuels.

Coal

(i) It is a hard like stone substance and black in color.

(ii) It has many uses since old times like it was used as heat source to cook food, to produce steam to run train and other engines, in thermal power plants to produce electricity etc.

- **History of Coal**

Before 300 million years, there were forests existing on the earth. As a result of some natural disasters like floods, these forests got buried in the earth. Eventually, layers of soil got deposited over them and compressed them. The high pressure and temperature over this buried forest converted them into coal.

Carbonization

(i) The process of conversion of dead plants or vegetation into coal is known as carbonization.

(ii) It is being found that coal mainly contains the carbon and on burning in air produces carbon dioxide gas.

- **Some product of obtains from Coal**

- (a) Coke**

It is hard, porous and black in color. It is the purest form of carbon.

Applications: In manufacturing of steel, extraction of metals, etc.

- (b) Coal Tar**

It is thick black colored liquid having foul smell. It is mixture of about 200 substances.

Applications: The by-products obtained from coal tar are used in manufacturing of synthetic dyes, drugs, explosives, perfumes, etc. Interestingly, naphthalene balls used to repel moths and other insects are also obtained from coal tar.

- (c) Coal Gas**

(i) It is obtained when coal is processed to obtain the coke.

(ii) Coal gas was used for street lighting for the first time in London in 1810 and in New York around 1820. Now a days, it is used as a source of heat rather than light.

Applications: It is mainly used as fuel in many industries.

- **Petroleum**

In past, many organisms were living in the seas. When these organisms die, their bodies got settled at the bottom of the sea and eventually layers of sand and clay got deposited over them. After millions of years, the absence of air, high temperature and pressure converted them into petroleum.

- **Composition of Petroleum**

Petroleum is a dark oily liquid and has foul smell. It contains many constituents like petroleum gas, petrol, diesel, lubricating oil, paraffin wax, etc.

Process of refining petroleum

It is the process of separating the various constituents of petroleum and is carried out in a petroleum refinery.

- **Different constituents of petrol and their uses**

Liquefied Petroleum Gas (LPG) - As fuel for home and industry.

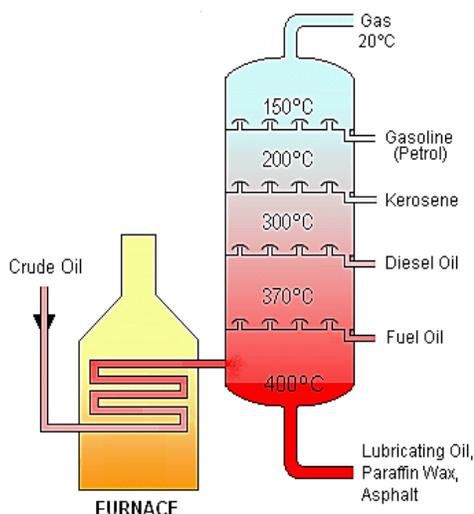
Petrol - As fuel for automobiles and as solvent for dry cleaning.

Kerosene - As fuel for stoves, lamps, etc.

Diesel - As fuel for heavy motor vehicles, generators, etc.

Lubricating Oil - For lubrication

Paraffin Wax - In ointments, candles, Vaseline, etc. Bitumen - For making paints, surfacing roads, etc.



- **Natural Gas**

It is another significant fossil fuel. And it is really convenient to send it through pipes. Compressed Natural Gas (CNG)

When natural gas is stored under high pressure it is termed as CNG.

Advantage: It causes less pollution. Also it can be used directly at homes and factories for burning and other purposes as it can be easily be transported through pipes.

Applications

- (i) It is used as fuel in automobiles.
- (ii) Also as a starting material for manufacturing of many chemicals and fertilizers.

- **Limitations of Natural Resources**

Fossil fuels needs millions of years to get transformed from dead bodies to fuels. Their demands are so high that after few hundred years there will be scarcity of these resources. In addition, too much of air pollution is caused when fuels are burnt. And also responsible for problems associated with global warming.

Some preventive measures to save fuels by Petroleum Conservation Research Association (PCRA)

- (i) Drive vehicles at average and constant speed.
- (ii) When not necessary shut down the vehicle's engines.
- (iii) Make sure pressure in tyres is correct.
- (iv) Always keep vehicles under good condition.