

Lesson at a Glance

- **Natural Resources:** The various resources which are obtained from the nature are called natural resources. For example; Air, Water, Soil etc.
- **Classes of natural resources are:**
 - *Exhaustible* resources
 - *Inexhaustible* resources
- **Exhaustible Natural Resources:** The resources which are limited in the nature and can be exhausted very soon by human activities are called *exhaustible* natural resources.
For example; Forests, Coal, Petroleum, Minerals, Wildlife and Natural gas.
- **Inexhaustible Natural Resources:** The resources which are present in unlimited quantity in nature and are not likely to be exhausted by human activities are called *inexhaustible* natural resources. For example, Air and Sunlight.
- **Fossils:** The remains of dead plants and animals which are buried under the rocks millions of year ago are called fossils.
- **Fossil Fuels:** The fuels formed by the remains of dead plants and animals are called fossil fuels.
- **Coal:** It is a fossil fuel formed by deeply buried remains of vegetation under compression, high pressure and high temperature over millions of years.
- **Carbonisation:** As coal contains mainly carbon, the *slow process* of conversion of dead vegetation into coal is called *carbonisation*.
- **Coke:** It is a tough, porous and black substance obtained from coal. It is an almost *pure form of carbon*.
- **Destructive Distillation:** The process of heating of wood or coal in the *absence* of air is called *destructive distillation*.
- **Coal Gas:** It is a gas obtained during the processing of coal to get coke. It can be used as a source of light and heat.

- **Coaltar.** It is a black, thick liquid obtained as the product during the processing of coal to get coke. It is a mixture of 200 substances. Its many products are used as starting materials for manufacturing a large number of substances such as dyes, drugs, perfumes, naphthalene balls, coal-tar was also used for metalling the road (nowadays, a *petroleum product bitumen* is used for metalling the roads).
- **Petroleum.** It is a dark oily liquid from which many valuable substances, like petrol and diesel are obtained. *Over millions of years* under high temperature and high pressure transformed dead sea organisms into *petroleum* and *natural gas*.
- **Natural Gas.** It is a very important fossil fuel. Natural gas is stored under high pressure as *compressed natural gas* (CNG). CNG is very less polluting and cheaper fuel.
- **Refining of Petroleum:** The process of separating the various constituents/fractions of petroleum is called *refining*. It is carried out in a **petroleum refinery**.
- **Constituents of Petroleum:** There are various substances separated in refining of Petroleum. They are:
LPG (Liquid Petroleum gas)
Petrol, Kerosene, Diesel, Lubricating oil, Paraffin wax and Bitumen
- **Bitumen:** It is the petroleum product which is now used in the road surfacing in place of coaltar.
- **Black Gold:** Due to great commercial importance of petroleum, it is also called as '*black gold*'
- **Petrochemicals:** The useful substances that are obtained from petroleum and natural gas are called as *petrochemicals*.

TEXTBOOK QUESTIONS SOLVED

- Q. 1. Make a list of various materials used by us in daily life and classify them as natural and man-made materials (Refer to Activity 5.1).

Ans.	Natural material	Man-made material
	1. Air	1. Table
	2. Soil	2. Chair
	3. Water	3. Car
	4. Sunlight	4. Bus
	5. CNG	5. TV
	6. LPG	6. Plastic
	7. Coal	7. Rubber
	8. Petrol	8. Food
	9. Fruits	9. Bed
	10. Minerals	10. Blackboard

Q. 2. Does this list include air, water, soil and minerals?

Ans. Yes, this list contains, air, water, soil and minerals.

Q. 3. Can we use all our natural resources forever?

Ans. No, we cannot use all our natural resources forever, because these are going to exhaust one day.

Q. 4. Can air, water and soil be exhausted by human activities?

Ans. No, these can not be exhausted at all.

Q. 5. Is water a limit less source?

Ans. Yes, water is a limitless source, but by unwise use and cutting of trees, sources of water can be finished.

Q. 6. What are the advantages of using CNG and LPG as fuels?

Ans. The advantages of using CNG and LPG:

- (i) CNG and LPG are clean fuels.
- (ii) Their cost is low.
- (iii) They can be used directly for burning.
- (iv) They are easily available.
- (v) They do not produce pollution.

Q. 7. Name the petroleum product used for surfacing of roads.

Ans. Bitumen is the petroleum product which is used for surfacing of roads these days.

Q. 8. Describe how coal is formed from dead vegetation. What is this process called?

Ans. About 300 million years ago the earth had dense forest in low lying wetland areas. Due to various natural processes,

like flooding and earthquakes, these forests got buried under the soil. The soil deposits layer by layer over them, they were compressed. Under high temperature and pressure the plants got converted to coal slowly. This process is called carbonisation.

Q. 9. Fill in the blanks.

- (a) Fossil fuels are _____, _____ and _____.
- (b) Process of separation of different constituents from petroleum is called _____.
- (c) Least polluting fuel for vehicles is _____.

Ans. (a) Coal, Petroleum and Natural gas
(b) Refining
(c) Compressed Natural Gas (CNG).

Q. 10. True/False.

- (a) Fossil fuels can be made in the laboratory.
- (b) CNG is more polluting fuel than petrol.
- (c) Coke is almost pure form of carbon.
- (d) Coaltar is a mixture of various substances.
- (e) Kerosene is not a fossil fuel.

Ans. (a) False (b) False (c) True
(d) True (e) False.

Q. 11. Explain why fossil fuels are exhaustible natural resources.

Ans. Fossil fuels are present in limited quantity in the nature. They can be exhausted by human activities. So fossil fuels are called exhaustible natural resources.

Q. 12. Describe characteristics and uses of coke.

Ans. Characteristic of coke:

- (i) Coke is tough.
- (ii) It is porous and black substance.
- (iii) It is an almost pure form of carbon.

Uses: Coke is used in the manufacture of steel and in the extraction of many metals.

Q. 13. Explain the process of formation of petroleum.

Ans. Petroleum was formed from organisms living in the sea. As these organisms died, their bodies settled at the bottom of the sea. These bodies got covered with layers of sand and

clay. Over millions of years, in the absence of air, and under high temperature and pressure the dead bodies are converted into petroleum and natural gas.

- Q. 14. The following Table shows the total power shortage in India from 1991-1997. Show the data in the form of graph. Plot shortage percentage for the years on the y-axis and the year on x-axis.

S. No.	Year	Shortage (%)
1	1991	7.9
2	1992	7.8
3	1993	8.3
4	1994	7.4
5	1995	7.1
6	1996	9.2
7	1997	11.5

Ans. Scale: Along x-axis 1 unit = 1 year

Along y-axis 1 unit = 1%

