Coal and Petroleum

Check point 1

Q. 1. The various resources are obtained from nature. What are these resources called?

Answer: The various resources like water, air, soil, vegetation, animals and minerals are obtained from nature. These resources are called natural resources.

Q. 2. Name the resources which can be used again and again.

Answer: The resources which can be used again and again are inexhaustible natural resources. Inexhaustible natural resources are the resources which are present in unlimited quantity in nature. These are not likely to be exhausted/end. They have a limitless supply. Examples are sunlight and air.

Q. 3. Write some examples of inexhaustible and exhaustible natural resources.

Answer:

Inexhaustible	Exhaustible
These are the resources which are present in unlimited quantity in nature.	These are the resources whose amount in nature is limited.
Examples: Sunlight and air	Examples: forests, coal, petroleum etc.

Check point 2

Q. 1. Coal, petroleum and natural gas are known as non-renewable sources. Why?

Answer: Coal, petroleum and natural gas are known as non-renewable resources because: ● The amount of coal, petroleum and natural gas in nature is limited.

● Their amount can be completely used by human activities.

Non-renewable resources are also called exhaustible resources.

Q. 2. Name the important source from which naphthalene balls are obtained.

Answer: Coal tar is the source from which naphthalene balls are obtained. Coal tar is a black thick oily liquid with bad smell. Products made from coal tar are used as starting materials for making objects used in everyday life. Naphthalene balls are used to repel insects.

Q. 3. Name the product of coal which is thick black liquid having an unpleasant smell.

Answer: Coal tar is the product of coal which is thick black liquid having an unpleasant smell. Coal tar is a mixture of 200 substances.

Check point 3

Q. 1. Why does petrol burn faster than coal?

Answer: Petrol burns faster than coal because petrol instantly reacts with oxygen molecules when burnt in the presence of air whereas coal does not react instantly. Petrol is obtained from petroleum.

Q. 2. Name the two products of petroleum which are not used as fuels.

Answer: Paraffin wax and bitumen are the two products of petroleum which are not used as fuels.

Paraffin wax: It is one of the products of petroleum which is used for making ointments, candles, vaselines etc.

Bitumen: It is a product of petroleum which is used for paints and road surfacing purposes.

Bitumen

Q. 3. Write the two products of petroleum which are used as fuels.

Answer: Petrol and kerosene are the two products of petroleum which are used as fuels.

Petrol: It is one of the products of petroleum which is used as motor fuel and aviation fuel etc.

Kerosene: It is a product of petroleum which is used as fuel for stoves, lamps and jets.

Petrol

Check point 4

Q. 1. Natural gas mainly consists of methane in what amount?

Answer: Natural gas consists of 70-90% of methane (CH_4)

Q. 2. When natural gas is compressed by applying pressure, what is it called?

Answer: When natural gas is compressed by applying pressure, it is called compressed natural gas (CNG). Natural gas is stored under high pressure as CNG. CNG is used as power generation. Today it is used as a fuel for transport vehicles. It is less polluting and a cleaner fuel.

Q. 3. Coal, petroleum and natural gas cannot be prepared in the laboratory. Why?

Answer: Coal, petroleum and natural gas cannot be prepared in the laboratory because:

They are prepared at high temperature and pressure. They are formed from the remains of dead organisms. Their formation is a very slow process (take around 100 million years to prepare). They are prepared in the absence of free oxygen (anaerobic). These all conditions are not available in the laboratory. Hence, coal, petroleum and natural gas cannot be prepared in the laboratory.

Q. 4. Write the name of the main fuels which are used for driving vehicles.

Answer: The name of main fuels which are used for driving vehicles are:-

Petrol: It is used as a fuel in light automobiles like motorcycle, cars, scooters etc. for driving.

Diesel: It is used as a fuel in heavy motor vehicles like truck and tractors.

Chapter Test

Q. 1. Name the petroleum product commonly used for electric generators.

Answer: Diesel is one of the petroleum product used for electric generator. The other use of diesel is that it also used as a fuel in heavy motor vehicles.

Diesel generator

Q. 2. Write the purest form of carbon.

Answer: The purest form of carbon is diamond.

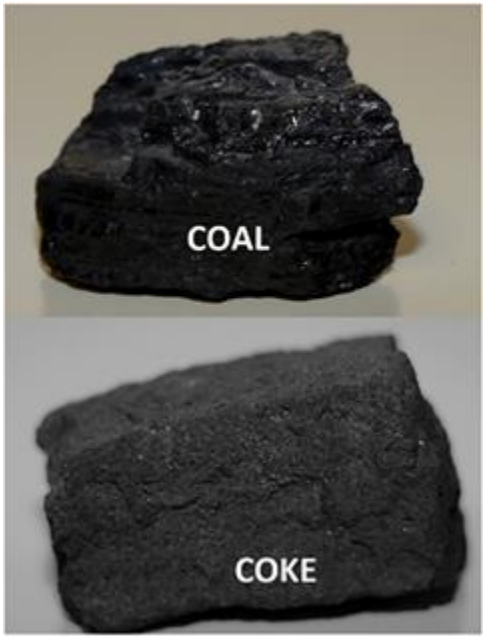
Q. 3. Is it possible to extract petroleum from under the sea?

Answer: Yes, it is possible to extract petroleum from under the sea. Petroleum was formed from dead organisms remain in the sea. Their bodies settled down at the bottom of the sea. The bodies got covered with layers of sand and clay. Over millions of years

in the absence of air, high temperature and pressure changed the dead organisms into petroleum.

Q. 4. How is coke obtained from coal?

Answer: Coke is a hard and dry fuel. It is prepared by heating bituminous coal (a type of coal) to a very high temperature in the absence of air. Coke has a high carbon content.



Q. 5. How can we save petrol/diesel while driving? Explain the statement.

Answer: We can save petrol/diesel while driving by following the tips given below:

- Drive at a normal speed.
- Switch off the engine at traffic lights or at a place where we have to wait.
- Ensure proper maintenance of the vehicle.
- Check tyre pressure regularly before driving.

Q. 6. Write the name of a petro-product used in dry cleaning.

Answer: The name of a petroleum product which is used in dry cleaning is petrol. The other use of petrol is that it is used as s fuel in motors.

Q. 7. Write a name of the substance that is used to repel moths and insects.

Answer: Naphthalene is used to repel moths and insects. We can say that it is used as an insecticide and pest repellent. Naphthalene is a white solid having a characteristic smell. It is obtained from coal tar which is a black thick liquid with an unpleasant smell.

Q. 8. Write the use of lubricating oil.

Answer: Uses of lubricating oil:

- It provides lubrication.
- It reduces the friction between the two layers which are in contact.
- It reduces corrosion in machines.
- It also reduces the temperature of quickly-heating machines.

Lubricating oil

Q. 9. Write the importance of petrochemicals.

Answer: Importance of petrochemicals are:

- They are used for the production of plastics, fibres, detergents etc.

● They are used in the manufacture of ammonia and methanol.

● They are considered as the important source for the production of chemicals which are used in industries.

Q. 10. Why renewable resources need to be conserved?

Answer: Renewable resources are also called inexhaustible natural resources. Sunlight and air are renewable resources. They both need to be conserved for a better future. We all need a clean air to breathe and a proper sunlight for our survival. Thus, renewable resources are needed to be conserved.

Q. 11. Write the advantages of using LPG as fuel.

Answer: The advantages of using LPG as fuel are:

● Liquefied petroleum gas (LPG) is easy to carry and portable.

● It does not contain sulphur hence makes it cleaner fuel.

● It is more reliable as it burns consistently and can cook quicker.

● It has a higher heating value which means that it is easily available at lower prices.

● It is more environment friendly than other sources of energy.

● It releases comparatively less carbon dioxide and oxides than other sources of energy.

Q. 12. Why should we use fossil fuels only when absolutely necessary?

Answer: We should use fossil fuels only when absolutely necessary because fossil fuels are non-renewable (exhaustible) source of energy. As we know that non-renewable resources are those resources whose amount in nature is limited. We have to save them now for our coming future generation and use them only when absolutely necessary.

Q. 13. State one use each of the following products of petroleum.

(a) Bitumen (b) Petroleum gas

Answer: (a) Bitumen:

- It is used for paints purpose.
- It is used for making roads. (any one)

(b) Petroleum gas:

- It is used as domestic fuel in its liquefied form, i.e., LPG.
- It is also used in heating appliances. (any one)

Q. 14. CNG is non-polluting fuel commonly used nowadays. Is it correct?

Answer: Yes, CNG (compressed natural gas) is non-polluting fuel commonly used nowadays. It is because:

- It is an eco-friendly fuel than petrol or diesel.
- It is a cleaner fuel.
- It is safer than other fuels.
- It is most preferred for the generation of electricity.
- It can be used directly for burning at homes and homes where it can be supplied through pipes.

Q. 15. Write about the extraction of coal.

Answer: About 300 million years ago, the earth has dense forests in low lying wetland areas. Due to flooding, these forests get buried and compressed under the soil. The temperature also increases as they go deeper and deeper. Due to the high pressure and temperature, dead plants slowly converted into coal.

Coal which is formed contains high carbon content, the slow process of conversion of dead remains into coal is called carbonisation.

Q. 16. What do you understand by exhaustible and inexhaustible natural resources? Name two exhaustible and inexhaustible natural resources.

Answer:

Inexhaustible	Exhaustible
These are the resources whose amount is limited.	These are the resources which are present in unlimited quantity in nature.
These resources are also called renewable resources.	These resources are also called non-renewable resources.
They cannot be completely used by human activities	They can be exhausted by human activities.
Sunlight and air are inexhaustible natural resources.	Fossil fuels, forests and wildlife are exhaustible natural resources.

Q. 17. What are petrochemicals? Name two petrochemicals.

Answer: Petrochemicals are the chemical substances which are derived from petroleum and natural gas.

These are used in the manufacture of detergents and fibres. These are also used for making polythene and man-made plastics.

Methane and hydrogen are two petrochemicals.

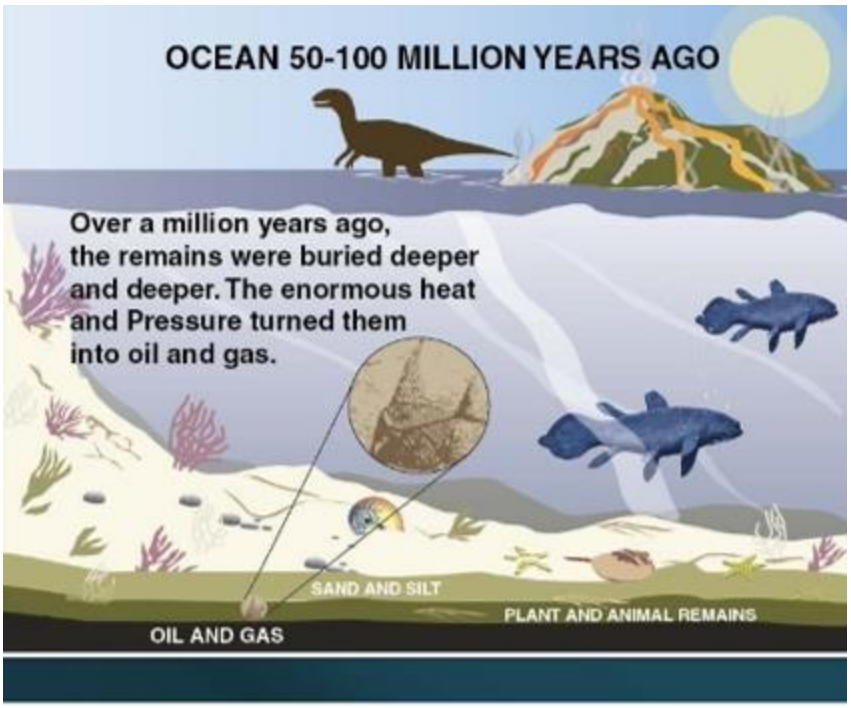
Q. 18. What are the products obtained on fraction distillation of coal tar?

Answer: The products obtained on fraction distillation of coal tar are:

- Synthetic Dyes
- Drugs
- Explosives
- Paints and perfumes
- Plastic balls
- Roofing materials
- Naphthalene balls

Q. 19. How is petroleum formed?

Answer: Petroleum was formed from dead organisms remain in the sea. Their bodies settled at the bottom of the sea. The bodies got covered with layers of sand and clay. Over millions of years, absence of air, high temperature and pressure changed the dead organisms into petroleum.



Petroleum formation