

- (Q.) Which organization in India, is associated with the conservation of petrol and diesel? (1 Mark)**
- (Ans)** Petroleum Conservation Research Association (PCRA) is associated with the conservation of petrol and diesel.
- (Q.) What are the natural resources? (1 Mark)**
- (Ans)** Resources obtained from the nature are called the natural resources. Example: coal, petroleum, etc.
- (Q.) How is carbon black prepared? (1 Mark)**
- (Ans)** Carbon black is prepared by burning oils and the petroleum gas in insufficient supply of air.
- (Q.) Write the products obtained by processing of coal. (1 Mark)**
- (Ans)** Coke, coal gas and coal tar are the three products obtained by processing of coal.
- (Q.) What is the constitution of natural gas? (1 Mark)**
- (Ans)** Natural gas contains 95% methane and 5% of other hydrocarbons.
- (Q.) What is the full form of PCRA? (1 Mark)**
- (Ans)** PCRA is Petroleum Conservation Research Association.
- (Q.) What are the inexhaustible natural resources? (1 Mark)**
- (Ans)** **Inexhaustible natural resources** :These resources are present in unlimited quantity in nature and are not likely to be exhausted by human activities. Examples are: sunlight, air, etc.
- (Q.) What are the exhaustible natural resources? (1 Mark)**
- (Ans)** **Exhaustible natural resources** :The amount of these resources in nature is limited. They can be exhausted by human activities. Examples are: coal, petroleum, and natural gas.
- (Q.) What are the fossil fuels? (1 Mark)**
- (Ans)** Those fuels which are obtained from the dead remains of living organisms are known as fossil fuels.
- (Q.) How dead plants are converted into coal? (1 Mark)**
- (Ans)** Under high pressure and high temperature, dead plants got slowly converted into coal. This process is known as carbonisation.
- (Q.) Explain the term carbonisation? (1 Mark)**
- (Ans)** The slow process of conversion of dead vegetation into coal is called carbonisation.

**(Q.) What is bitumen?**

**(1 Mark)**

**(Ans)** Bitumen is a petroleum product. These days, bitumen is used in place of coal tar for metalling the roads.

**(Q.) How can we obtain the coal gas?**

**(1 Mark)**

**(Ans)** Coal gas is obtained as a by-product during the processing of coal to get coke.

**(Q.) Define the term coal tar?**

**(1 Mark)**

**(Ans)** Coal tar is a black, thick liquid with unpleasant smell. It is a mixture of about 200 substances.

**(Q.) Explain the term petroleum refinery?**

**(1 Mark)**

**(Ans)** The process of separating the various constituents/ fractions of petroleum is known as refining. It is carried out in a petroleum refinery.

**(Q.) Give tips to save petrol/diesel while driving.**

**(1 Mark)**

**(Ans)** Tips are:

- (i) Drive at a constant and moderate speed as far as possible.
- (ii) Switch off the engine at traffic lights or at a place where we have to wait.
- (iii) Ensure correct tyre pressure, and
- (iv) Ensure regular maintenance of the vehicle.

**(Q.) Write the constituents of Petroleum.**

**(2 Marks)**

**(Ans)** The constituents of petroleum are petroleum gas, petrol, kerosene, diesel, lubricating oil, paraffin wax and bitumen.

**(Q.) Give two examples of exhaustible and inexhaustible natural resources.**

**(2 Marks)**

**(Ans)** Sunlight and air are examples of inexhaustible resources. Coal and petroleum are examples of exhaustible natural resources.

**(Q.) Explain the formation of petroleum.**

**(2 Marks)**

**(Ans)** Petroleum was formed from organisms living in the sea. The remains of these **organisms** got settled at the bottom of the sea and subsequently got covered with sand and clay. Over millions of years, absence of air, high temperature and high pressure, transformed these dead organisms into petroleum.

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**(Q.) Define refining of petroleum. Where it is carried out? (2 Marks)**

**(Ans)** The process of separating the various fractions by fractional distillation is known as refining of petroleum. It is carried out in a petroleum refinery.

**(Q.) Write four uses of petrochemicals. (2 Marks)**

**(Ans)** 1) Petrochemicals are used in the manufacture of detergents.  
2) They are used in the manufacture of fibres (polyester, nylon and acrylic).  
3) They are used in the manufacture of polythene.  
4) They are used in the manufacture of man-made plastics.

**(Q.) Write two advantages of using CNG as a fuel. (2 Marks)**

**(Ans)** 1) It can be supplied by pipes and used directly at home and factories.  
2) It is used as a fuel for transport vehicles because it is less polluting.

**(Q.) (i) What are petrochemicals?  
(ii) Why petroleum is called black gold? (2 Marks)**

**(Ans)** (i) The useful substances that are obtained from petroleum and natural gas are called petrochemicals.  
(ii) Due to its great commercial importance, petroleum is called black gold.

**(Q.) Name the places in India where reserves of natural gas are found. (2 Marks)**

**(Ans)** Natural gas is found in Tripura, Rajasthan, Maharashtra and Krishna Godavari delta.

**(Q.) Where do we find reserves of petroleum and natural gas – above water or below water? Why? (2 Marks)**

**(Ans)** Petroleum and natural gas reserves are found above water because petroleum and natural gas are lighter than water.

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**(Q.) Define refining of petroleum. Where it is carried out? (2 Marks)**

**(Ans)** The process of separating the useful fractions from petroleum by fractional distillation is known as refining. It is carried out in a petroleum refinery.

- (Q.) (i) What are petrochemicals?  
(ii) Why petroleum is called black gold?** (2 Marks)
- (Ans)** (i) The useful substances that are obtained from petroleum and natural gas are called petrochemicals.  
(ii) Due to its great commercial importance, petroleum is called black gold.
- (Q.) Name the places in India where reserves of natural gas are found.** (2 Marks)
- (Ans)** Natural gas is found in Tripura, Rajasthan, Maharashtra and Krishna Godavari delta.
- (Q.) Where do we find reserves of petroleum and natural gas – above water or below water? Why?** (2 Marks)
- (Ans)** Petroleum and natural gas reserves are found above water because petroleum and natural gas are lighter than water.
- (Q.) Why petroleum is known as Black gold?** (3 Marks)
- (Ans)** Petroleum is a black oily liquid. Its fractional distillation yields a range of combustible fuels, petrochemicals, and lubricants. These petrochemicals are used in the manufacture of detergents, fibers (polyester, nylon, acrylic etc.), polythene and other man-made plastics. Also, hydrogen gas obtained from natural gas, is used in the production of fertilisers (urea).
- Hence, petroleum is called ‘black gold’ due to its great commercial importance and appearance.
- (Q.) Coal is a fossil fuel. Explain.** (3 Marks)
- (Ans)** Due to natural processes, like flooding, dead plants got buried under the soil. As more soil deposit over them, they were compressed. The temperature also rose as they sank deeper and deeper. Under high pressure and high temperature, dead plants got slowly converted to coal. As coal contains mainly carbon, the slow process of conversion of dead vegetation into coal is called **Carbonisation**. As it was formed from the remains of vegetation, coal is also called a fossil fuel.
- (Q.) What are the advantages of using CNG and LPG as fuels?** (3 Marks)
- (Ans)** Advantages are as follows:  
1. They are less polluting.  
2. They are cleaner fuel.  
3. The great advantage of CNG is that it can be used directly for burning in homes and factories where it can be supplied through pipes.
- (Q.) Give one use of each coke, coal tar and coal gas.** (3 Marks)
- (Ans)** Coke is used in the manufacture of steel and in the extraction of many metals.  
Coal tar is used for metalling the roads.  
Coal gas is used as a fuel in many industries situated near the coal processing plants.
- (Q.) Write three uses of coal.** (3 Marks)
- (Ans)** Uses of coal are:  
1. In thermal power plants to produce electricity.  
2. In the manufacture of coke, coal tar and other useful products,  
3. As domestic fuels for cooking purposes.

**(Q.) Distinguish between exhaustible and inexhaustible natural resources. (3 Marks)**

**(Ans) Inexhaustible sources:** These resources are present in unlimited quantity in nature and are not likely to be exhausted by human activities.  
Examples are: sunlight, air.

**Exhaustible sources:** The amount of these resources in nature is limited. They can be exhausted by human activities.

Examples of these resources are forests, wildlife, minerals, coal, petroleum, natural gas etc.

**(Q.) Why should we use the fossil fuels economically and wisely? (3 Marks)**

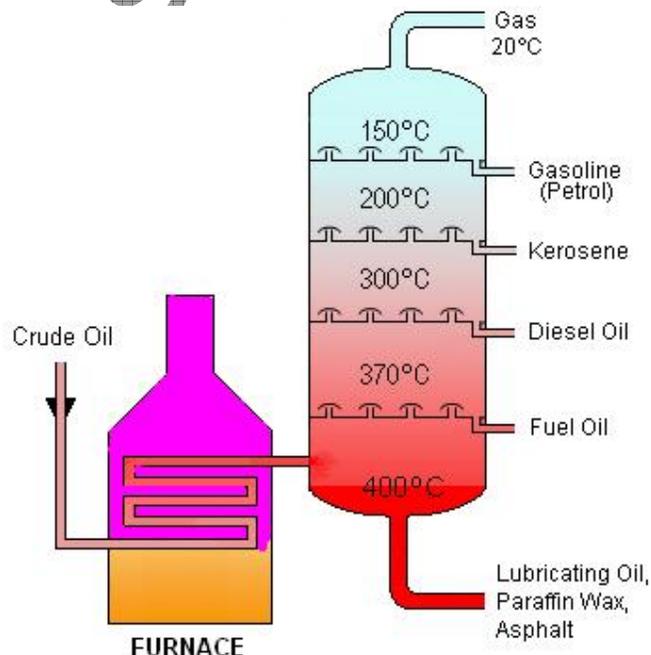
**(Ans)** The deposits of fossil fuels are limited. It requires millions of years for the dead organisms to get converted into these fuels. On the other hand, the known reserves of these will last at most a few hundred years. Moreover, burning of these fuels is a major cause of air pollution. Their use is also linked to global warming.  
So, we should use the fossil fuels economically and wisely.

**(Q.) Can the fossil fuels be prepared in the laboratory? If not, Why? (3 Marks)**

**(Ans)** Fossil fuels can not be prepared in the laboratory because their formation is very slow process. It requires very high temperature and pressure and takes millions of years. The conditions for the formation of fossil fuels cannot be created in the laboratory.

**(Q.) Draw a neat and clean diagram of petroleum refinery. (3 Marks)**

**(Ans)** Diagram is as follows:



**(Q.) How petroleum is mined from their deposits?**

**(3 Marks)**

**(Ans)** Petroleum is brought to the surface by drilling a hole in the Earth's crust and sinking pipes deep down through the impervious cap rock. Natural gas first comes out under high pressure. Then, petroleum is pumped out, collected in tanks and transported, for further processing.

**(Q.) What are the various constituents of petroleum? Give their uses.**

**(5 Marks)**

**(Ans)** Constituents of petroleum are petroleum gas, petrol, kerosene, diesel, lubricating oil, paraffin wax and bitumen.

S.No.	Constituents of petroleum	Uses
1.	Petroleum Gas in Liquid form (LPG)	Fuel for home and industry.
2.	Petrol	Motor fuel, aviation fuel, solvent for dry cleaning.
3.	Kerosene	Fuel for stoves, lamps and for jet aircrafts.
4.	Diesel	Fuel for heavy motor vehicles, electric generators.
5.	Lubricating oil	Lubrication.
6.	Paraffin wax	Ointments, candles, vaseline etc.
7.	Bitumen	Paints, road surfacing.

**(Q.) Write short note on natural gas.**

**(5 Marks)**

**(Ans)** Natural gas is a very important fossil fuel consisting primarily of methane. It is stored under high pressure as compressed natural gas (CNG). CNG is used for power generation and also as a fuel for transport vehicles because it is less polluting. Natural gas is also used as a starting material for the manufacture of a number of chemicals and fertilisers.

It is a cleaner fuel. The greatest advantage of CNG is that it can be used directly for burning in homes and factories where it can be supplied through pipes.

**(Q.) (i) What is carbonisation?**

**(ii) Name three products obtained after the processing of coal. Also mention their uses. (5 Marks)**

**(Ans)** (i) The slow process of conversion of wood into coal is called carbonisation.

(ii) The three products obtained by processing of coal are:

1) Coke: It is a pure form of carbon, which is tough, porous and black in colour. It is used in the manufacture of steel and extraction of many metals.

2) Coal gas: It is used for street lighting.

3) Coal tar: It is a black thick liquid with unpleasant smell. Coal tar is a mixture of several substances.

It is used for manufacturing dyes, drugs, perfumes, naphthalene balls etc.

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