St. Andrews Scots Sr. Sec. School

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Answer key

Class: VIII **Subject: Science** **Chapter: Coal and Petroleum**

Define these terms:

1.Carbonisation – The gradual process of coal formation from dead vegetation is known as

Carbonisation.

2.Destructive distillation - The destructive distillation of coal is the process of heating coal in the absence of air.

3. Water gas – Water gas is a mixture of carbon monoxide and hydrogen and is formed by passing steam over red hot coke.

4.Hydrocarbon – A hydrocarbon is an organic compound consisting of hydrogen and carbon found in Crude oil, natural gas and coal.

5.Fossil Fuel – A fossil fuel is a carbon compound or hydrocarbon containing material such coal, oil and natural gas formed naturally in the Earth's crust.

CHECK POINT 1

1. Water, sunlight and soil

2. Air and sunlight

3. Coal gas and Natural gas

4. Coal gas

5. Carbon, hydrogen, oxygen, nitrogen and sulphur

CHECK POINT 2

1. Sedimentary rocks

2. Petroleum refining

3. Paraffin wax

4. Methane

5. Global warming

PRACTICE TIME

A. Tick (✓) the correct answer.

1. (d) 2. (d) 3. (a) 4. (b) 5. (c)

B. Say True or False.

1. (T) 2. (F) 3. (T) 4. (T) 5. (F)

C. Very Short Answer Type Questions.

1. Air, water and sunlight.

2. The process of slow conversion of dead trees and plants into coal is called carbonisation.

3. The components of coal gas are hydrogen, methane, carbon monoxide and other gases.

4. Carbon dioxide.

5. The main component of natural gas is methane.

D. Short Answer Type Questions.

1. The resources which are present in a limited amount in nature, cannot be continually replenished and are likely to be exhausted by various human activities are called exhaustible natural resources. Petroleum, coal, natural gas, minerals and forests are some exhaustible natural resources.

Sun

Water

Air

2. Chemically, coal is a mixture of carbon, hydrogen and oxygen in combined form, together with small amounts of nitrogen and sulphur.

3. Coke is a solid substance obtained by destructive distillation of coal. It is greyish-black in colour with a rough texture. It is prepared by heating coal in the absence of air. As a result, the volatile impurities and moisture get removed. The solid left behind is coke. Coke contains 98% carbon.

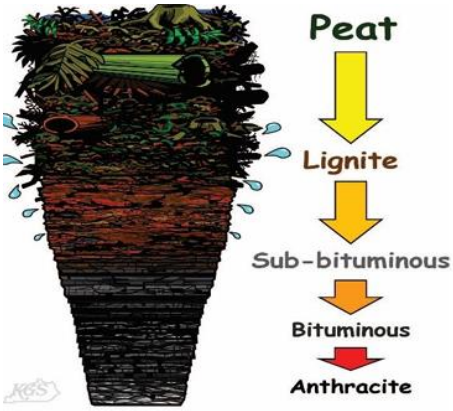
4. The natural gas stored under high pressure is called CNG (Compressed Natural Gas). It is used as fuel to run autorickshaws, buses, cars, taxies, etc. for bringing down the pollution.

5. Fossil fuels such as coal, petroleum and natural gas are exhaustible natural resources. They are found in limited amount in nature, cannot be continually replenished and are likely to be exhausted by various human activities. This is the reason we should save fossil fuels.

E. Long Answer Type Questions.

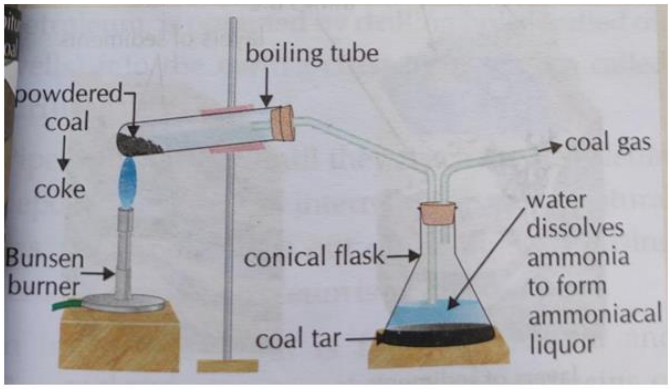
1. The resources which are present in a limited amount in nature, cannot be continually replenished and are likely to be exhausted by various human activities are called exhaustible natural resources, e.g., petroleum, coal, natural gas, etc. On the other hand, the resources which are present in an unlimited amount in nature, can be continually replenished and are not likely to be exhausted by various human activities are called inexhaustible natural resources, e.g., air, sunlight, water and soil.

2. Coal was formed about three hundred million years ago by the process of carbonisation. Our earth was covered with dense forests and swamps. The trees and plants of dense forests died, and fell down on the wet and swampy floor of the forest and began to sink into the soil. More and more dead plants, gravel and soil deposited over them. The heat and pressure from the top layers gradually turned the remains of plants into coal.



Formation of coal

3. Coal tar is a dark-black and oily liquid obtained by destructive distillation of coal. It has very unpleasant smell. It is used to make inks, dyes, detergents, insecticides, artificial fibres, etc. Previously, it was used for metalling the roads.



Destructive distillation of coal

4. Various constituents of petroleum with one use of each are as follows:

(a) Petroleum gas: It is used in the production of carbon black.

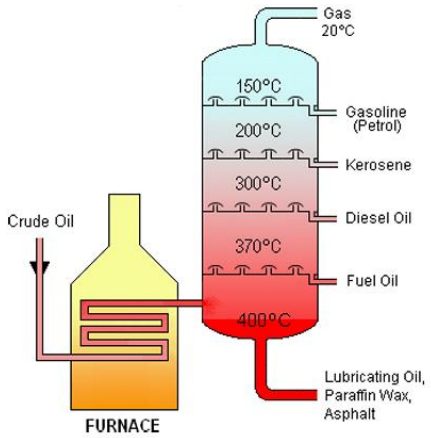
(b) Petrol: It is used as fuel in vehicles.

(c) Diesel: It is used as fuel for buses, cars, ships, trucks, etc.

(d) Kerosene: It is used as a fuel for stoves and lamps.

(e) Fuel oil: It is used in power plants to generate electricity.

(f) Paraffin wax: It is used for making shoe polish, grease, candles and ointments.



Fractional distillation of petroleum

5. Coal is a black or brownish-black, hard and combustible substance.

• Different types of coal depending on the amount of carbon present in it are anthracite (90%), bituminous or black coal (60%) and lignite (40%).

• Coal is used as a fuel to cook food, for generating electricity in thermal power plants and as a source of energy in various industries like cement, paper, steel, iron, etc.

F. HOTS Questions.

1. A clean fuel does not produce smoke and ash. This protects us from many lung and eye diseases. Therefore, it is advised to use a clean domestic fuel.

2. CNG is a cleaner fuel. It does not produce ash or smoke on burning. Thus, use of CNG as an automobile fuel has brought down the air pollution level.

3. Coke is a better fuel than coal because coke does not produce smoke on burning and also, it produces more heat as compared to coal.