

Class 8 Science Chapter 3 Important Questions

Class 8 Science Chapter 3 Important Questions Set – 1

What do you mean by “natural resources”?

We use various materials for our basic needs, some of them are found in nature and some have been made by human effort. Mobile, aeroplane, clock, sewing machine, etc. all these are made by human efforts. But air, water, soil, minerals, oxygen etc. from nature therefore, there are called “natural resources”.

What do you mean by in-exhaustible natural resources? Give examples.

Those resources are present in unlimited quantity in nature and are not likely to be exhausted by human activities, called inexhaustible natural resources. Examples are: sunlight, air.

What do you mean by exhaustible natural resources? Give examples.

The amount of resources which is limited in nature. They can be exhausted by human activities, called exhaustible natural resources. Examples of these resources are forests, wildlife, minerals, coal, petroleum, natural gas etc.

What do you mean by fossil fuel?

Some exhaustible natural resources like coal, petroleum and natural gas. These were formed from the dead remains of living organisms (fossils). So, these are all known as fossil fuels. Fossils are the remains of the pre-historic plants or animals buried under the earth millions of years ago.

Show with an activity, we should concern about the consumption of exhaustible natural resources as coming generation(s) and left something for them.

Take some containers. Fill them with popcorn/peanuts/roasted gram/toffees. Divide students into groups of seven each. Further divide each group into three subgroups containing 1, 2 and 4 students. Label them as first, second and third generation respectively. These sub-groups represent the consumers. As population is growing, second and third generations have larger number of consumers. Put one full container for each group on a table. Ask consumers of the first generation from each group to consume

eatables from the container of their group. Now, ask the second-generation consumers from each group to do the same. To observe carefully the availability of eatables in each container. If something is left in the containers, ask third generation from each group to consume it. Now, finally observe whether all the consumers of the third generation got the eatables or not. Also observe if anything is still left in any of the containers. Assume that the eatables in the container represent the total availability of an exhaustible natural resource like coal, petroleum or natural gas. Each group may have different consumption pattern. It may be that the earlier generations in some groups were concerned about the coming generation(s) and left something for them.

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Discuss the natural making process of “fossil fuels”.

Fossil fuel were formed from the dead remains of living organisms (fossils). Fossil fuels take millions of years to form. Under the earth, in the absence of air, the chemical effects of heat, pressure and bacteria converted the buried remains of plants and animals into fossil fuels like coal, petroleum and natural gas. The remains of large land plants where are converted into coal whereas those of tiny marine plants and animals were converted into petroleum and natural gas.

What do you mean by “carbonization”?

About 300 million years ago the earth had dense forests in low lying wetland areas. Due to natural processes, like flooding, these forests got buried under the soil. As more soil deposited 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.

Write any four uses of coal.

Uses of coal: It is as hard as stone and is black in color.

Coal is used in many ways:

Coal is used as a fuel in many home and industries. It is used as a fuel at thermal power plants for generating electricity or energy. Coal is also used as a fuel in various industries. And it is a source of coal gas, coal tar and coke.

What do you mean by “Coal Tar”?

Coal Tar is a thick black liquid having an unpleasant smell which is obtained by heating coal in the absence of air. It is a mixture of about 200 substances. Products obtained from coal tar are used as starting materials for manufacturing various substances used in

everyday life and in industry, like synthetic dyes, drugs, explosives, perfumes, plastics, paints, photographic materials, roofing materials, etc. Interestingly, naphthalene balls used to repel moths and other insects are also obtained from coal tar.

What is “crude oil” or “mineral oil”? When did we get petroleum?

Petroleum is known as “crude oil” or “mineral oil”. Petroleum is a dark coloured thick crude oil, found deep below the ground in certain areas. It has an unpleasant odour. Petroleum refers rock oil. It is called petroleum because it is found under the crust of earth, trapped in rocks. Petroleum is a complex mixture of compounds known as “hydrocarbons”.

The world’s first oil well was drilled in Pennsylvania, USA, in 1859. Eight years later, in 1867, oil was struck at Makum in Assam. In India, oil is found in Assam, Gujarat, Mumbai High and in the river basins of Godavari and Krishna.

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Arun wants to know the formation of petroleum by natural process. Would you help him?

Petroleum was formed from organisms living in the sea. As these organisms died, their bodies settled at the bottom of the sea and got covered with layers of sand and clay. Over millions of years, absence of air, high temperature and high pressure transformed the dead organisms into petroleum and natural gas.

What is coke?

It is a tough, porous and black substance. It is almost pure form of carbon. Coke is used in the manufacture of steel and in the extraction of many metals.

Why petroleum is termed as “Black Gold”?

Many useful substances are obtained from petroleum and natural gas. These are termed as ‘Petrochemicals’. These are used in the manufacture of detergents, fibres (polyester, nylon, acrylic etc.), polythene and other man-made plastics. Hydrogen gas obtained from natural gas, is used in the production of fertilisers (urea). Due to its great commercial importance, petroleum is also called ‘black gold’.

Discuss the refining process of “Petroleum”.

Petroleum is a dark oily liquid. It has an unpleasant odour. The crude oil or petroleum oil is a complex mixture of different hydrocarbons such as petroleum gas, petrol, diesel, lubricating oil, paraffin wax, etc. The process of separating crude oil or petroleum oil into more useful fraction is called refining. The separation of petroleum to be done in different

fractions based on the fact that the different fractions of petroleum have different boiling point ranges. It is done on oil refinery. The separation of petroleum in two different fraction is done by the process of fractional distillation where petroleum is collected separately at different boiling point ranges.

Petroleum Conservation Research Association (PCRA) advises some tips on how to save petrol/diesel while driving. Discuss.

In India, the Petroleum Conservation Research Association (PCRA) advises people how to save petrol/diesel while driving. Their 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 you have to wait,
- iii) Ensure correct tyre pressure, and
- iv) Ensure regular maintenance of the vehicle.

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What is “Coal gas”? Explain.

Coal gas is a gaseous fuel which is obtained by the strong heating of coal in absence of air. During the process of coal to get coke coal gas is used as a fuel in industries which are situated near the coal process plants. When coal gas burns it also produces a good amount of light.

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.

We say fossil fuels will last only for a few hundred years. Comment.

Fossil fuels will last only for a few hundred years because they are exhaustible natural resources. If consumed at a rate faster than the rate at which these are formed in nature, they will get exhausted very soon.

Once the present stock of these gets exhausted, no new supplies of these fossil fuels will be available to us in the near future because it requires millions of years for the conversion of that organisms into these fuels.

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

CNG and LPG are very important fuels because it is easy to transport them through pipes. CNG (Compressor Natural Gas) and LPG (Liquefied Petroleum Gas) are used for power generation and as non-polluting fuels. Its great advantages is are that it can be used directly for burning in homes and factories.

Why should we use petrol or diesel only when absolute necessary?

We should use these fuels only when absolute necessary because:

1. It will reduce air pollution and thus lead to better environment.
2. It will reduce the risk of global warming.
3. It will ensure their availability for a longer period of time.

Write short note on “Compressed Natural Gas”.

Natural gas is a very important fossil fuel because it is easy to transport through pipes. Natural gas is stored under high pressure as compressed natural gas (CNG). CNG is used for power generation. It is now being used as a fuel for transport vehicles because it is less polluting. It is a cleaner fuel. 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. Such a network of pipelines exists in Vadodara (Gujarat), some parts of Delhi and other places. Natural gas is also used as a starting material for the manufacture of a number of chemicals and fertilisers.

India has vast reserves of natural gas. In our country, natural gas has been found in Tripura, Rajasthan, Maharashtra and in the Krishna Godavari delta.

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How CNG is a better fuel than petrol and diesel in vehicles?

CNG is good alternative to petrol and diesel in vehicles because it is a clean fuel and does not cause air pollution. CNG is a good fuel, because it burns easily and produces a lot of heat. Moreover, natural gas burns with a smokeless flame and causes no air pollution. Natural gas does not leave behind any residue on burning. Therefore, natural gas is clean fuel as compared to other fossil fuels.

Now in days, CNG is being used in many vehicles to reduce air pollution. It is filled in cylinders.

You are provided with a mixture of petroleum and water. Can you suggest a method to separate the two?

Decantation can be used to separate a mixture of petroleum and water. The mixture is allowed to stand. Petroleum is lighter than water, so it floats over water.

Carefully, lighter layer of petroleum can be poured and separated without disturbing the heavier layer of water.

Write two important uses of “Coke”.

- i)Coke is mainly used as a reducing agent in the extraction of metals (like iron, zinc, etc.)
- i)It is used in the manufacture of steel.

Why is petrol exhaustible natural resources whereas sunlight is not? Explain.

The natural resources which are present in a limited quantity in nature and can be exhausted or used up by human activities are called exhaustible natural resources, e.g. coal, petroleum and natural gas, minerals, forest, wildlife etc.

It requires millions of years for the conversion of the dead organisms into petroleum from which petrol is separated. So, once the present stock of it gets exhausted, no new suppliers of it will be available to us in the near future, where is sunlight is present in an unlimited quantity in nature, so it is an inexhaustible natural resource. It is not likely to be exhausted by human activities.

What is natural gas? What are the advantages of using CNG?

Natural gas is a very important fossil fuel. It is stored under high pressure as compressed natural gas (CNG).

Advantages of CNG:

- i) It is easy to transport.
- ii) It does not produce any pollution.
- iii) No residue is left after burning of CNG.
- iv) It burns completely in the air.