

Q1: You are provided with a mixture of petroleum and water. Can you suggest a method to separate the two?

Answer:

Petroleum has a lower density than water. The procedure of decantation can be used to separate the two. Since it floats on top of the water, light petroleum can be precisely poured. Thus, using this method, we can easily separate the two.

Q2: What does CNG stand for and why is it considered to be a better fuel than petrol?

Answer:

CNG stands for compressed natural gas, and it is a better fuel than gasoline because it is an environmentally friendly gas that does not hurt the environment. In addition, it emits substantially less smoke.

- Its principal application is as a fuel substitute in automobiles.
- It emits fewer greenhouse gases than other countries (in comparison with LPG).
- Methane is the most essential element of CNG.
- Since it disperses rapidly into the air, it is relatively safe.
- As the crankcase oil does not dilute and pollute, it increases the life of the lubricating oil.
- It is very healthful because it easily disperses into the air.

Q3: Name the petroleum product used as fuel for stoves, lamps and jet aircrafts.

Answer:

Kerosene is a petroleum-based substance. It's used to power lamps, stoves, and jet planes.

- Kerosene is a crude oil fraction made up of the carbon atoms $C_{12}H_{26}$ – $C_{15}H_{32}$.
- Kerosene is a fossil fuel that is produced as a by-product of crude oil.
- Energy is stored in the form of chemical energy in fossil fuels, which is turned into heat and light energy when burned.
- Kerosene is often pale yellow or colourless in appearance, with a pleasant odour.
- It can also be used as a cleaning agent and for heating and cooking.

Q4: Fill in the blanks in the following sentences.

- (a) Coal is one of the _____ used to cook food.
- (b) When heated in air, coal burns and produces mainly _____ gas.
- (c) Coal tar is a black, thick _____ with an _____ smell.
- (d) Petroleum, _____ and _____ are fossil fuels.
- (e) Forests and coal are _____ natural resources.

Answer:

- (a) Coal is one of the **fuels** used to cook food.
- (b) When heated in air, coal burns and produces mainly **Carbon dioxide** gas.

(c) Coal tar is a black, thick **liquid** with an **unpleasant** smell.

(d) Petroleum, **coal** and **natural gas** are fossil fuels.

(e) Forests and coal are **exhaustible** natural resources.

Q5: The underlined words in the following sentences have been jumbled up. Write them in their correct form.

(a) Loca is obtained from mines.

(b) Umpetlore is a fossil fuel.

(c) Rineryfe is a place where various fractions of petroleum are separated.

(d) Keenrose is a fuel used in jet crafts.

(e) Nutsgilhs is an example of inexhaustible natural resources.

Answer:

(a) **Coal** is obtained from mines.

(b) **Petroleum** is a fossil fuel.

(c) **Refinery** is a place where various fractions of petroleum are separated.

(d) **Kerosene** is a fuel used in jet crafts.

(e) **Sunlight** is an example of inexhaustible natural resources.

Q6: Fill in the blanks.

(a) The slow process of conversion of dead vegetation into coal is called _____.

(b) Coal and petroleum are formed from the dead remains of organisms and are known as _____.

(c) The black thick liquid with _____ smell is known as coal tar.

(d) During the processing of coal to get coke, coal tar and _____ are also obtained.

(e) The process of separating the various constituents of petroleum is known as _____.

(f) Excessive burning of fossil fuels is a major cause of _____.

Answer:

(a) The slow conversion of dead vegetation into coal is called **carbonisation**.

(b) Coal and petroleum are formed from the dead remains of organisms and are known as **fossil fuels**.

(c) The black, thick liquid with an **unpleasant smell** is known as coal tar.

(d) During the processing of coal to get coke, coal tar and **coal gas** are also obtained.

(e) The process of separating the various constituents of petroleum is known as **Fractional Distillation**.

(f) Excessive burning of fossil fuels is a major cause of **Global Warming**.

Q7: Write True/False against the following statements.

(a) Oxygen in air is an exhaustible natural resource.

(b) Resources which are present in unlimited quantity in nature are called exhaustible natural resources.

(c) Wildlife is an exhaustible natural resource.

(d) Under high temperature and pressure, dead plants get slowly converted to coal.

(e) CNG is less polluting fuel than petrol and diesel.

Answer:

(a) False.

Because oxygen can be reused, oxygen in the air is an inexhaustible natural resource.

(b) False.

Resources which are present in unlimited quantity in nature are termed inexhaustible natural resources.

(c) True.

Wildlife is an exhaustible natural resource.

(d) True.

Under high temperature and pressure, dead plants get slowly converted to coal.

(e) True.

CNG is less polluting fuel than petrol and diesel.

Short Answer Type Questions

Q1: Sunlight and air are inexhaustible natural resources. Comment.

Answer:

Natural resources which are inexhaustible are those whose quantity is not based on consumption or is not subject to scarcity. The amount of sunlight and air available is unaffected by human consumption. This is why these natural resources are inexhaustible.

Q2: Some natural resources are given in a box. Classify them into the exhaustible and inexhaustible natural resources.

air, coal, natural gas, sunlight, petroleum, minerals, forests, oxygen.

Answer:

Exhaustible resources are coal, natural gas, petroleum, minerals, forests.

- They are in limited supply and are being depleted by human activity.
- These resources can't be replenished once they've been depleted.
- Non-renewable or non-replenishable resources are those that cannot be replenished.
- They, like iron and coal, require conservation measures to ensure that they can be used in the future.

Inexhaustible resources are air, sunlight, oxygen.

- They exist in an infinite supply and cannot be depleted by human activity.
- These resources have the power to regenerate themselves over time.

- These are resources that can be replenished or are renewable.
- They do not require conservation measures because they can be renewed, such as sunlight and water.

Q3: Write two important uses of coke.

Answer:

Coke is a high-carbon substance made by distilling coal in a destructive manner.

Coke is mostly used as a fuel for stoves, furnaces, and blacksmithing. Because coke creates very little smoke, it is sometimes preferred over coal.

- It is also utilised to produce iron in a blast furnace.
- Steel and a variety of other products are made from coke.
- It is used as a reducing agent in the process of metal extraction. Zinc and iron, for example.

Q4: Write the characteristics and some important uses of coal.

Answer:

Coal is a black, stone-like substance. It's one of the fuels used in the kitchen. It was once employed in railway engines to generate steam to power them. It is used as a fuel in thermal power plants, as well as in a variety of other sectors.

- Coal is one of the fossil fuels.
- It's a brittle and flammable fuel.
- It has a lot of carbon in it.
- It is an energy source.

The important uses of coal are as follows-

- It is used to generate energy and as a cooking fuel in households.
- It's used to make coal gas and coke.
- Coal is also used in the manufacture of specialised products including activated carbons, carbon fibre, and silicon metals.

Q5: Look at Fig. 5.1 where petroleum and natural gas deposits are shown. Why do we find oil layer above water layer?

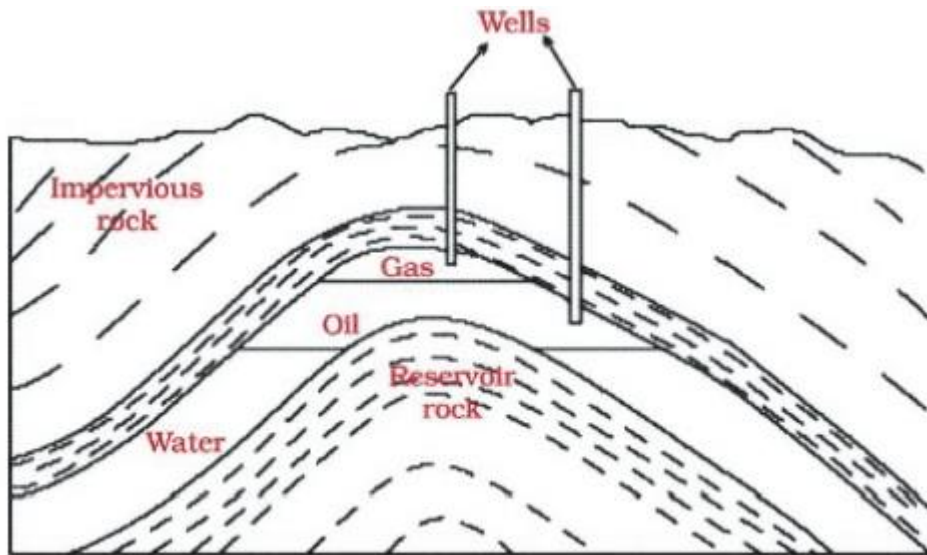


Fig. 5.1

Answer:

The oil layer is found above the water layer because oil is light and floats over it. Furthermore, because oil has a lower density than water, it floats on the water's surface.

Q6: Fill in the blanks and complete the story.

About 300 million years ago the earth had dense _____ in low lying wetland areas. Due to natural processes, like _____, these forests got buried under the _____. As more _____ deposited over them, they were compressed. The _____ also rose as they sank deeper and deeper. Under high _____ and high _____, dead plants got slowly converted into coal.

Answer:

About 300 million years ago, the earth had dense **forests** in low-lying wetland areas. Due to natural processes, like **floods**, these forests got buried under the **earth surface**. As more **soil** deposited over them, they were compressed. The **pressure** also rose as they sank deeper and deeper. Under high **temperature** and high **pressure**, dead plants got slowly converted into coal.

Q7: Match the items given in Column I with the items of Column II.

Column I	Column II
(a) Used for road surfacing	(i) Black gold
(b) Natural gas	(ii) Vaseline and candles
(c) Petroleum	(iii) Bitumen
(d) Paraffin wax	(iv) CNG

Answer:

(a) Used for road surfacing – (iii) Bitumen

(b) Natural gas – (iv) CNG

(c) Petroleum – (i) Black gold

(d) Paraffin wax – (ii) Vaseline and candles

Long Answer Type Questions

Q1: Name the products obtained and their uses when coal is processed in industry.

Answer:

During coal processing, the following items are produced:

Coal tar is used to make synthetic pharmaceuticals, explosives, fragrances, paints, and plastics, among other things.

Coke is a substance that is used to make steel and extract metals.

Coal gas is a fuel that is used in industry.

Q2: We say fossil fuels will last only for a few hundred years. Comment.

Answer:

The creation of fossil fuels takes a very long time. It also requires special circumstances, which aren't common. As a result, their limited supply will only endure a few hundred years. Fossil fuels are exhaustible resources. Nature has a limited supply of these resources. Human activities have the potential to deplete them. Forests, wildlife, minerals, coal, petroleum, natural gas, and other resources are examples of these resources.

Petroleum and coal are both fossil fuels. It took millions of years for dead organisms to be turned into these fuels. The known reserves of these, on the other hand, will last only a few hundred years. Furthermore, the burning of these fuels contributes significantly to air pollution. Their use contributes to global warming. As a result, we should only use these fuels when absolutely required. As a result, the environment will be improved, the risk of global warming will be reduced, and they will be available for a longer length of time.

Q3: We read in newspapers that burning of fuels is a major cause of global warming. Explain why.

Answer:

The use of fossil fuels in many regions has resulted in significant air pollution. Sulphur dioxide, carbon dioxide, and other hazardous gases are produced when fossil fuels are burned. The gases that vehicles, power plants, companies, residences, and other sources of pollution produce assist to raise the temperature of the environment and the earth by heating the atmosphere and air.

Q4: While driving what are the tips we must follow to save petrol/diesel/natural gas?

Answer:

Natural gas generates much lesser nitrogen oxides (NO_x) and particulate matter (PM) when burned than diesel or even gasoline. In addition, the combustion process is quieter. However, there is a more compelling reason to conserve fossil fuels, to contribute in environmental recovery.

1. Make sure the tyre pressure is correct.
2. Maintain the vehicle on a regular basis.
3. Maintain a consistent and moderate speed to save fuel waste.
4. At traffic signals or other places where you have to wait, turn off the motor.
5. When at all possible, avoid using the air conditioner. Air conditioners consume 10% more energy.
6. Replace the lubricant on a regular basis. Only use branded oil that has been suggested by the manufacturer.

Q5: Imagine that all the exhaustible natural resources are exhausted by human activities. Do you think survival of living beings would be possible? If yes, why?, If not, why not?

Answer:

It would be impossible for humans to survive if natural resources were not available. Fossil fuels are necessary for human survival. After oxygen, it is one of the most crucial factors in our lives. Fossil fuels are used to generate energy, which is used to power factories and provide all of the other necessities without which a human would perish. Apart from these, humans use fossil fuels to power their automobiles. Human life will come to a halt without fuel.

For example, forests are a significant natural resource that produces rain, prevents soil erosion, and floods, and provides oxygen and other valuable items. We can't picture what life would be like without them.

Fossil fuels, wildlife, forests, minerals, and other non-renewable natural resources are all important in our lives.

Q6: Why petrol is exhaustible natural resource, whereas sunlight is not? Explain.

Answer:

Petrol is a fossil fuel created by the breakdown of dead plants and animals inside the waters over millions of years. It can only be found in a handful of locations. This fossil fuel is converted into petrol, which is a precious commodity. Humans use it more ferociously the more restricted it is. Because of this, petrol is a finite resource. Sunlight, on the other hand, is a type of energy that the sun generates. A lot of energy is generated in this process. And will carry on indefinitely, as long as the inhabitants of the Earth exist.

Q7: Write some important uses of the various constituents of petroleum.

Answer:

Petroleum has been used in some capacity. Petroleum is made up of sea-based creatures. As these organisms perished, their remains sank to the ocean's bottom, where they were buried in layers of sand and clay. Absence of air, high temperature, and high pressure turned dead organisms into petroleum and natural gas over millions of years. It has a variety of applications, including:

- Agriculture
- Detergents, Dyes, and Others
- Plastics, Paints and More
- Pharmaceuticals
- Rubber

Constituents of petroleum	Uses
Petroleum Gas in Liquid form (LPG)	Fuel for home and industry
Petrol	Motor fuel, aviation fuel, solvent for dry cleaning
Kerosene	Fuel for stoves, lamps and for jet aircrafts
Diesel	Fuel for heavy motor vehicles, electric generators
Lubricating oil	Lubrication
Paraffin wax	Ointments, candles, Vaseline etc.
Bitumen	Paints, road surfacing

Q8: Coal reserves are said to be enough to last for another hundred years. Do you think we need to worry in such case? Why or why not?

Answer:

Coal deposits are quite limited. A coal reserve is only good for about 100 years. Given the rate at which humans consume coal, it's unlikely that it will survive another 100 years.

The consumption of coal is steadily increasing. Coal is used extensively in everything from modest homes to large companies and power plants. As a result, coal is becoming scarce. This fossil fuel inside the earth takes millions of years to return to nature. However, the consumption is excessive, and it will not last long.

As a result, we should use coal with caution and responsibility. Apart from that, we should make use of other renewable energy sources.

Q9: What steps would you suggest for the judicious use of fossil fuels?

Answer:

Because fossil fuels are limited and only exist in small quantities in nature, they should be used with caution. Furthermore, fossil fuels take millions of years to produce. When fossil fuels are burned, pollution results.

Steps made to ensure that fossil fuels are used wisely:

- Make more use of public transportation.
- Don't throw your fossil fuels.
- While driving to school or work, we should consider carpooling.
- Renewable energy sources such as wind and solar power are being adopted.
- Instead of LPG, biogas is used as a fuel.
- Maintain the vehicle on a regular basis.
- At traffic signals or other places where you must wait, turn off the motor.

Q10: Complete the crossword Fig. 5.2 with the help of the clues:

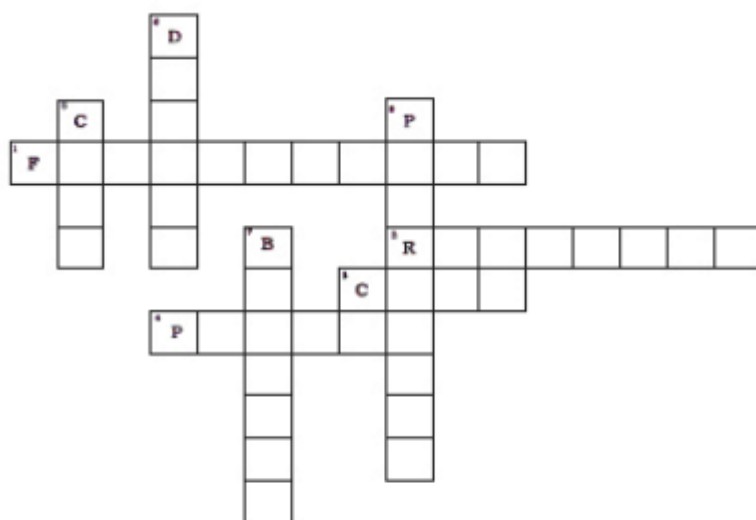


Fig. 5.2

Across

1. Fuels obtained from dead remains of living organisms. (6,5)
2. A process by which the various constituents of petroleum are separated. (8)
3. A porous black substance obtained from coal. (4)
4. Another name for motor fuel. (6)

Down

5. The substance obtained by carbonisation. (4)
6. Fuel for heavy motor vehicles. (6)
7. A petroleum product used for road surfacing. (7)

8. Dead remains of sea animals got converted into it. (9)

Answer:

Across

1. FOSSIL FUELS

2. REFINING

3. COKE

4. PETROL

Down

5. COAL

6. DIESEL

7. BITUMEN

8. PETROLEUM

CBSE Class 8 Science Chapter 5 MCQ Type Questions

1. From the given statements, choose the incorrect one.

- (a) Petroleum gas in liquid form (LPG) is used as fuel in homes and industries
- (b) Kerosene is used as fuel for stoves, lamps and jet aircraft
- (c) Diesel is used as fuel for heavy motor vehicles, electric generators
- (d) Paraffin is used in paints and road surfacing

Answer: (a) Petroleum gas in liquid form (LPG) is used as fuel in homes and industries.

2. Naphthalene obtained from coal tar is used as _____

- (a) Honey bee repellent
- (b) Mosquito repellent
- (c) Snake repellent
- (d) Moth repellent

Answer: (d) Moth repellent

3. Name a pair of exhaustible Natural resources from the following:

- (a) Air and sunlight
- (b) Coal and soil
- (c) Water and petroleum
- (d) Minerals and wildlife

Answer: (d) Minerals and wildlife