

Chapter 5: Coal and Petroleum

NCERT Exemplar · Class 8 · Science

Questions

Question 1

Various materials which are obtained from nature are called natural resources. Which of the following is not a natural resource?

- (a) minerals
- (b) water
- (c) soil
- (d) plastic

Soln:

Answer is (d) plastic

Explanation:

Minerals, water and soil are natural resources, whereas plastic is a man-made substance.

2. Air is a natural resource and cannot be exhausted by human activities. It is known as an inexhaustible natural resource. Which of the following is another inexhaustible natural resource?

- (a) coal
- (b) petroleum
- (c) sun-light
- (d) minerals

Soln:

Answer is (c) sunlight

Explanation:

Coal, petroleum and minerals are non-renewable sources of energy, which can get exhausted, whereas sunlight is a renewable resource.

3. Which of the following is a pair of exhaustible natural resources?

- (a) coal and soil
- (b) air and sunlight
- (c) water and petroleum
- (d) wildlife and minerals

Soln:

Answer is (d) wildlife and minerals

Explanation:

Coal and Soil, air and sunlight, water and petroleum. All these natural resources cannot be exhausted by human consumption and other uses. Wildlife and minerals are exhaustible natural resources, which are available in limited quantities and will be exhausted as a result of continuous use.

4. Coal is processed in industries to get some useful products. Which of the following is not obtained from coal?

- (a) coke
- (b) coal tar
- (c) coal gas
- (d) CNG

Soln:

Answer is (d) CNG

Explanation:

CNG is compressed natural gas which is made by compressing the natural gas. CNG is a petroleum product, whereas coke, coal tar and coal gas are obtained from coal.

5. Exhaustible natural resources are:

- (a) unlimited in quantity.
- (b) not dependent on nature.
- (c) limited in quantity.
- (d) not exhausted by human activities.

Soln:

Answer is (c) limited in quantity.

Explanation:

Exhaustible natural resources are limited resources, which are available in limited quantities and are going to be exhausted by continuous human use. Wildlife, petroleum, water and minerals are examples of Exhaustible natural resources.

6. Fossil fuels are obtained from:

- (a) remains of non-living materials.**
- (b) dead remains of birds only.**
- (c) dead remains of insects only.**
- (d) dead remains of living organisms.**

Soln:

Answer is (d) dead remains of living organisms

Explanation:

Fossil fuels are obtained millions of years ago remains of dead remains of living organisms. Get buried under the earth.

7. Coal is formed from the remains of

- (a) vegetation only**
- (b) animals only**
- (c) both vegetation and animals**
- (d) neither vegetation nor animals**

Soln:

Answer is (a) vegetation only

Explanation:

Coal is a fossil fuel formed from the remains of prehistoric plants or animals. The formation of coal occurs over millions of years via a process known as carbonation.

8. Which substance is formed by the carbonisation of dead vegetation?.

- (a) coal**
- (b) coke**

(c) coal gas

(d) coal tar

Soln:

Answer is (a) coal

Explanation:

The formation of coal occurs over millions of years via a process known as carbonation. In this process, dead vegetation is converted into carbon-rich coal under very high temperature and pressure.

9. Naphthalene balls are obtained from coal tar and are used as:

(a) mosquito repellent

(b) honey bee repellent

(c) moth repellent

(d) snake repellent

Soln:

Answer is (c) moth repellent

Explanation:

Naphthalene balls are small balls of chemical pesticide and deodorant, the characteristic smell of naphthalene makes the insects and moths run away from naphthalene stored under clothes etc.

10. Which of the following is not a constituent of petroleum?

(a) paraffin wax

(b) lubricating oil

(c) petrol

(d) coke

Soln:

Answer is (d) Coke

Explanation:

Coke is not a constituent of petroleum. It is almost a pure form of carbon.

11. Petroleum was formed from organisms:

(a) living on the land

(b) living on the plants

(c) living in the sea

(d) living on the rocks

Soln:

Answer is (c) living in the sea

Explanation:

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

12. Choose the incorrect statement from the following:

(a) It is difficult to transport natural gas through pipes.

(b) The disadvantage of natural gas is that it can not be used directly for burning in homes.

(c) Natural gas is stored under high pressure as compressed natural gas.

(d) Natural gas cannot be used for power generation.

Soln:

Answer is (a) It is difficult to transport natural gas through pipes.

Explanation:

Natural gas is a naturally occurring hydrocarbon gas, which is extracted from the petroleum deposits deep beneath the earth. It is a highly flammable gas, therefore, it is difficult to transport through pipes.

Very Short Answer Questions

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

Soln:

Decantation is the method used to separate a mixture of petroleum and water.

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

Soln:

CNG stands for compressed natural gas.

CNG is considered to be a better fuel than petrol because:

1. CNG burns with no smoke.
2. It does not cause air pollution.
3. CNG does not produce any poisonous gas.

15. Name the petroleum product used as fuel for stoves, lamps and jet aircraft.

Soln:

Kerosene is the petroleum product used as fuel for stoves, lamps and jet aircrafts.

16. 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.

Soln:

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

17. 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) Nutsgilh is an example of inexhaustible natural resources.

Soln:

- (a) coal
- (b) petroleum

- (c) refinery
- (d) kerosene
- (e) sunlight

18. 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 _____.

Soln:

- (a) The slow process of 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 a coke, coal tar and coal gas are also obtained.
- (e) The process of separating the various constituents of petroleum is known as refining.
- (f) Excessive burning of fossil fuels is a major cause of air pollution.

19. Write True/False against the following statements.

- (a) Oxygen 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.

Soln:

- a) False

Explanation: Oxygen is not an exhaustible natural resource.

b) False,

Explanation: Resources which are present in unlimited quantity in nature are called inexhaustible natural resources.

(c) True,

(d) True,

(e) True.

Short Answer Questions

20. Sunlight and air are inexhaustible natural resources. Comment.

Soln:

Sunlight and air are present in unlimited quantity in nature and are not likely to be exhausted by human activities or by any other means. Hence Sunlight and the air are inexhaustible natural resources.

21. 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 and Oxygen.

Soln:

Exhaustible	Inexhaustible
Coal	Air
Forests	Oxygen
Minerals	Sunlight
Petroleum	
Natural gas	

22. Write two important uses of coke.

Soln:

Important uses of coke are as follows:

- Coke is used in the manufacture of steel.
- Coke is used as a reducing agent in the extraction of metal from its ore.

23. Write the characteristics and some important uses of coal.

Soln:

Characteristics of coal.

- It is a fossil fuel.
- It is Combustible.
- It is as hard as a stone and is black in colour.
- When it is burned in the air, it releases CO_2 .

Uses of Coal

- Coal is one of the fuels used to cook food.
- Coal is also used as fuel in various industries.
- It is also used in thermal power plants to produce electricity.
- Earlier, it was used in railway engines to produce steam to run the engine.

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

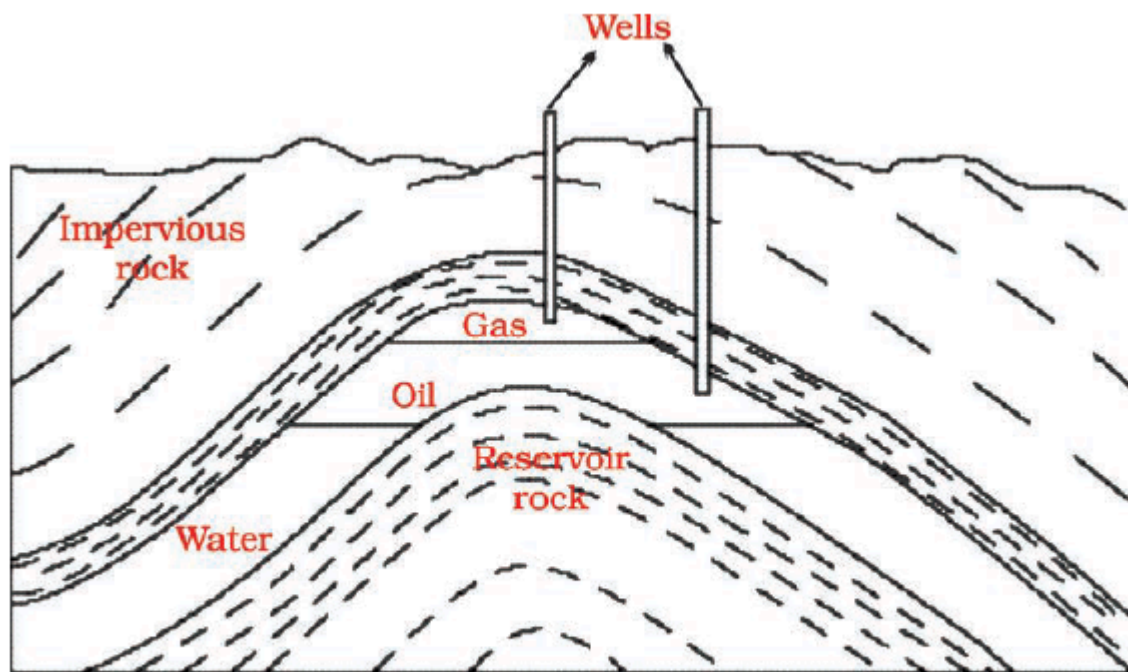


Fig. 5.1

Soln:

Oil is found above the water layer because oil is lighter than water, hence oil floats above the water layer.

25. 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.

Soln:

About 300 million years ago, the earth had dense forests in low-lying wetland areas. Due to natural processes, like floods, these forests get 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 into coal.

26. 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

Soln:

Column I	Column II
(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 Questions

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

Soln:

Coke, coal tar and coal gas are the products obtained during the process of coal in the industries.

Application of these products are:

1. Coal gas is used as fuel.
2. Coke is used as a reducing agent in the extraction of metals.

3. Coal tar is used as starting material for manufacturing various substances such as synthetic dyes, drugs, explosives, perfumes, paints etc.

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

Soln:

Fossil fuels take millions of years to get converted into these fuels. Formation of fossil fuels requires specific conditions, and it doesn't happen quite often. Therefore, their limited stock will last only for a few hundred years.

29. We read in newspapers that the burning of fuels is a major cause of global warming. Explain why?

Soln:

Burning of fuels leads to the release of carbon-di-oxide, carbon-monoxide and SO_2 gases. These are the greenhouse gases that not only increase air pollution but also contribute to global warming by trapping radiation from the sun.

30. While driving, what are the tips we must follow to save petrol/ diesel/natural gas?

Soln:

Steps to follow while driving to save petrol/ diesel/natural gas are:

- Ensure correct tyre pressure.
- Ensure regular maintenance of the vehicle.
- Drive at a constant and moderate speed as far as possible.
- Switch off the engine at traffic lights or at a place where you have to wait.

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

Soln:

If all the exhaustible natural resources are exhausted by human activities, then the survival of living beings would be impossible. Fossil fuels are a very important source of energy for us today. On burning fossil fuel, it gives off heat and light. The heat produced can be used to cook food or to run engines such as automobile engines. It is also used to generate electricity as in powerhouse where the most common fuel used is coal.

32. Why is petrol an exhaustible natural resource, whereas sunlight is not? Explain.

Soln:

Petrol is a fossil fuel, which is produced after years of decomposition of buried and plants deep down the earth. To produce petrol, we need millions of years. If we use petrol higher than the requirement, it

will get exhausted. Whereas the sun is a continuous and unlimited source of energy. Sun is a renewable resource of energy which will not get exhausted.

33. Write some important uses of the various constituents of petroleum.

Soln:

Constituents of Petroleum are petroleum gas, petrol, diesel, kerosene, lubricating oil, paraffin wax and bitumen.

Constituents of petroleum	Uses
Petroleum Gas (LPG)	Fuel for home and industry
Petrol	Used as fuel for light automobiles.
Kerosene	Fuel for lamps, stoves and jet aircrafts
Diesel	Used as fuel for large automobiles and electric generators
Lubricating oil	Used as a lubricant for engines
Paraffin wax	Used in the preparation of Ointments, candles, vaseline etc.
Bitumen	Used in the preparation of Paints, road surfacing

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

Soln:

Coal reserves are said to be enough to last for another hundred years. Because there will be no availability of coal after the exhaust of existing coal resources. To produce coal, it will take millions of years. Dead organisms should be buried in the earth, and it should decompose in the absence of oxygen. For all these processes, coal formation needs millions of years.

35. What steps would you suggest for the judicious use of fossil fuels?

Soln:

Steps to take for the judicious use of fossil fuels

- Use solar energy wherever possible.
- Use fossil fuels only when it is required.
- We can use natural gas in place of fossil fuels
- Switch off automobile engine while standing in traffic.
- Use Alternate sources of energy like, solar, wind and biomass should be used in place of fossil fuels.

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

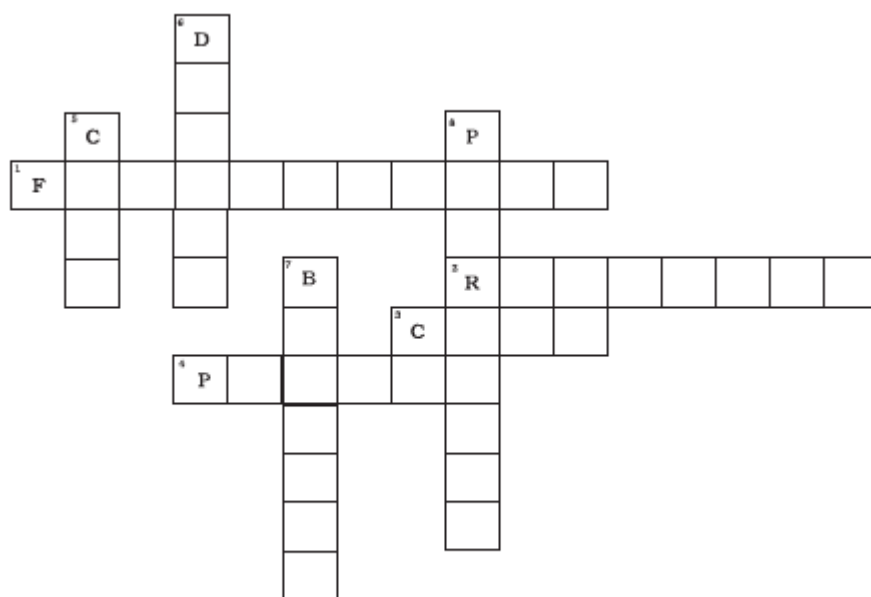


Fig. 5.2

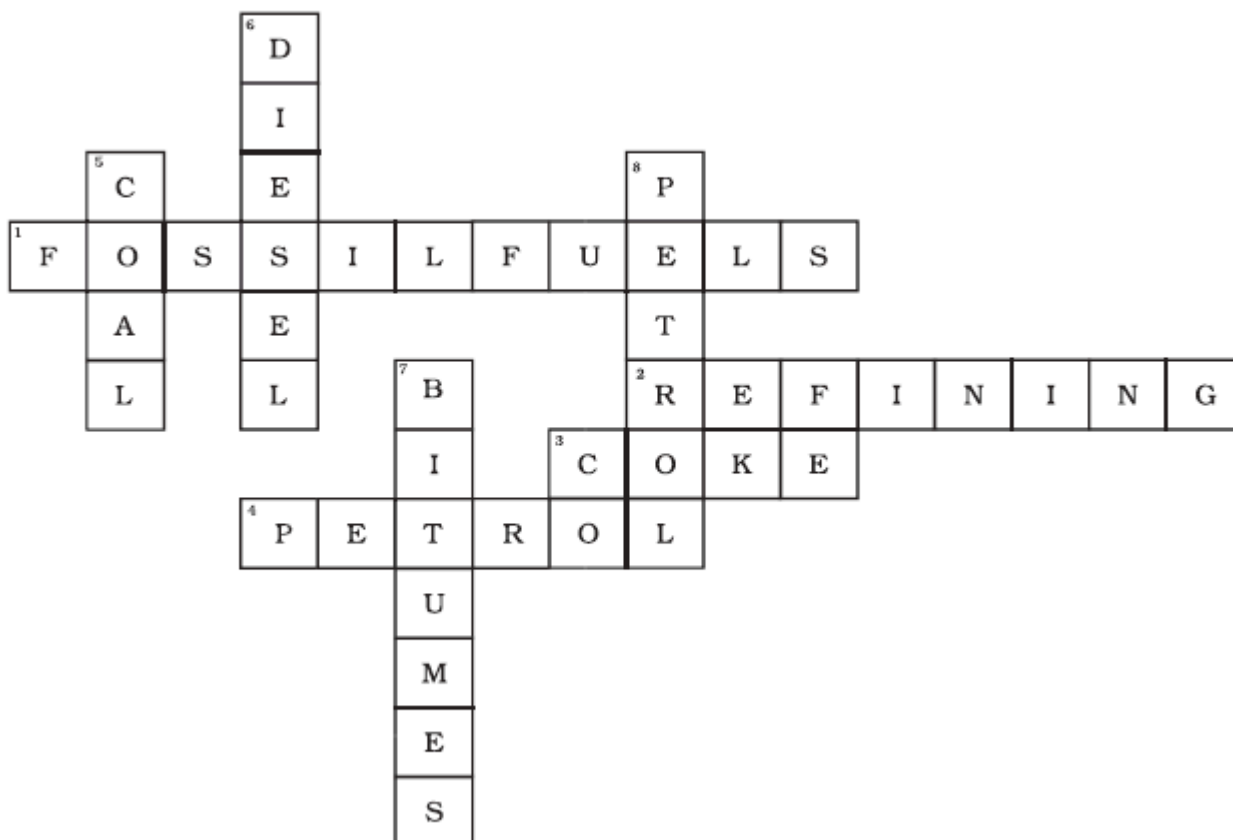
Across

1. Fuels obtained form 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 form of 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)

Soln:



Subunits of NCERT Exemplar for Class 8 Chapter 5 Coal and Petroleum

- Coal – Story of coal – coke – coal tar – coal gas
- Petroleum – refining of petroleum – definition of petroleum
- Natural gas
- Some natural resources are limited

List of important keywords to pay attention

- Coal
- Coal gas
- Coal tar
- Coke
- Fossil fuel
- Natural gas
- Petroleum
- Petroleum refinery

Solution

Solution coming soon.
