

Chapter - 5

Coal and Petroleum

Multiple Choice Questions

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 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) sun-light

Explanation:

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 sun-light
- (c) water and petroleum
- (d) wild life and minerals

Soln:

Answer is (d) wild life and minerals

Explanation:

In option a there is soil, In option b there is sunlight and in option c there is water which will not get exhausted hence option d) is right.

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 other options provided 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 and they get exhausted by human activities.

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 (a) remains of non-living materials.

Explanation:

Fossil fuels are obtained millions of years ago remains of non-living materials. 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 (d) neither vegetation nor animals

Explanation:

Coal is formed 300 million years ago when buried plants and trees get decomposed.

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:

Coal is formed 300 million years ago when buried plants and trees get decomposed.

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:

Characteristic smell of naphthalene makes the insects and moth 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 (b) lubricating oil

Explanation:

Lubricating oil is obtained from crude petroleum.

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 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.

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

Explanation:

Natural gas can be used for power generation hence statement d) is wrong

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 method is used to separate 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 burns with no smoke hence it does not cause air pollution. CNG does not produce any poisonous gas hence CNG is considered a better fuel than petrol.

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

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 **fuel** 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 peroleum 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 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 refining.
- (f) Excessive burning of fossil fuels is a major cause of air pollution.

19. 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.

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 is present in unlimited and they will not get exhausted by any means. Hence Sunlight is 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, oxygen.

Soln:

Exhaustible	Inexhaustible
coal	air
natural gas	sunlight,
petroleum,	oxygen.
minerals	
Forests	

22. Write two important uses of coke.

Soln:

Important uses of coke are as follows

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

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

Soln:

Characteristics of coal.

- It is as hard as stone and is black in colour.
- It is Combustible
- It is a fossil fuel
- When it is burned in air it releases CO₂.

Uses of Coal

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

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

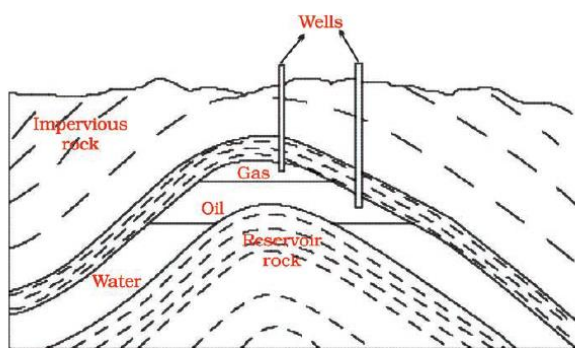


Fig. 5.1

Soln:

Oil is lighter than oil hence oil floats over it.

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 burried 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 got burried under the soil. As more soil deposited over them, they were compressed. The temperature also rose as they sank deeper and deeper. Under high temperature 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

- (a) Used for road surfacing
- (b) Natural gas
- (c) Petroleum
- (d) Paraffin wax

Column II

- (i) Black gold
- (ii) Vaseline and candles
- (iii) Bitumen
- (iv) CNG

Soln:

Column I

- (a) Used for road surfacing
- (b) Natural gas
- (c) Petroleum
- (d) Paraffin wax

Column II

- (iii) Bitumen
- (iv) CNG
- (i) Black gold
- (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 obtained when we process coal. Coke is used as reducing agent in the extraction of metals. Coal tar is used as starting material for manufacturing various sustances such as synthetic dyes, drugs, explosives, perfumes, paints etc. Coal gas is used as fuel.

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 burning of fuels is a major cause of global warming. Explain why.

Soln:

Burning of fuels lead to release of carbon-di-oxide, carbon-monoxide and SO₂ gases. These are the green houses gases that not only increases the air pollution but also contribute for the global warming by trapping radiations from 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

- 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,
- Ensure correct tyre pressure.
- Ensure regular maintenance of the vehicle.

31. 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?

Soln:

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

32. Why petrol is 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. For producing petrol we need millions of years. If we use petrol higher than the requirement. Petrol will get exhausted. Whereas sun is a continuous and unlimited source of energy. Sun is 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 lubricant for engines
Paraffin wax	Used in preparation of Ointments, candles, vaseline etc.
Bitumen	Used in 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 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 resource. To produce coal it will take millions of years. Dead organisms should be buried in the earth and it should decompose in the absence oxygen. For all these process 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 fossil fuels only when it is required.
- Switch off automobile engine while standing in a traffic.
- Use solar energy wherever possible.
- We can use natural gas in place of fossil fuels
- 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:

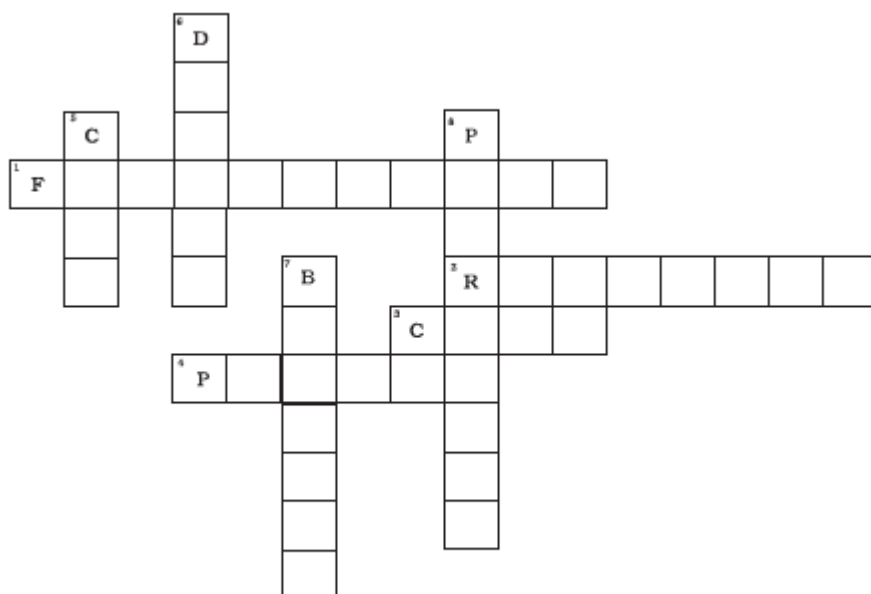


Fig. 5.2

Image to be changed

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 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:

