



COAL AND PETROLEUM

SOLUTIONS:

EXERCISES:

Q1 What are the advantages of using CNG and LPG as fuel?

Ans: The advantages of using CNG and LPG as fuel are

- They can be burnt directly.
- They give lot of heat energy when burnt.
- They can be transported easily through pipelines.
- They do not release smoke when burnt.
- They are used as a clean fuel for transport vehicle.
- They are less polluting than petrol and diesel.

Q2. Name the petroleum product used for surfacing of roads.

Ans: Bitumen is the petroleum product used for surfacing roads

Q3. Describe how coal is formed from dead vegetation? What is this process called?

Ans: Dense forests got buried under the soil due to natural processes like floods, earthquakes etc about 300 millions of years ago. These got compressed as more soil deposited over them. When they sank deeper and deeper, they were exposed to very high pressure and high temperature under the extreme condition dead plant got slowly converted to coal.

This slow process of conversion of dead vegetation into coal is called carbonization

Q4. Fill in the blank

a) Fossil fuel are and

Ans: coal, petroleum, natural gas

b) Process of separation of different constituent from petroleum is called

Ans: refining

c) Least polluting fuel for vehicle is

Ans: CNG

Q5. Tick true or false against the following statements

- a) Fossil fuel can be made in the laboratory(T/F) Ans: False
- b) CNG is more polluting fuel than petrol (T/F) Ans: False
- c) Coke is almost pure form of carbon (T/F) Ans: True
- d) Coal tar is a mixture of various substance(T/F) Ans: True
- e) Kerosene is not a fossil fuel (T/F) Ans: False

Q6. Explain why fossil fuel s are exhaustible natural resources.

Ans: Fossil fuels are exhaustible natural resources because they cannot be prepared in the laboratory. They require millions of years to form from the dead vegetation and animals that get buried inside the earth. They also require specific conditions and it does not happen quite often. The rate at which we are using them is very fast comparing to the rate of their formation. Therefore limited stock will last only for a few hundred years.

Q7. Describe characteristics and uses of coke.

Ans: Coke is a tough, porous and black substance. It is obtained from processing coal in industries and it is almost pure form of carbon. Coke is used in manufacture of steel and in the extraction of many metals.

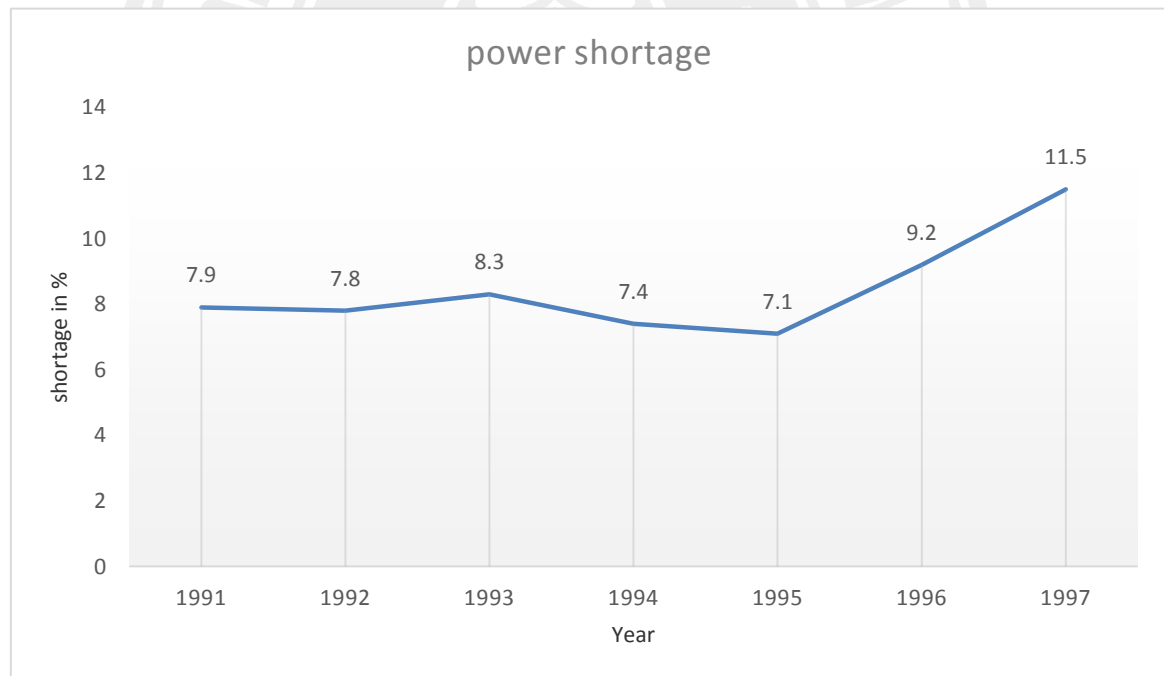
Q8. Explain the process of formation of petroleum.

Ans: Petroleum was formed from dead organisms that settled down at the bottom of the sea. These organisms buried with layers of sand and clay over millions of year ago. Due to lack of air and presence of high temperature and high pressure, these dead organisms transformed into petroleum and natural gas.

Q9. The following table shows the total power shortage in India from 1991-1997. Show the data in the form of a graph. Plot shortage percentage for the years on the Y-axis and the year on the X-axis.

Sl. No	Year	Shortage(%)
1	1991	7.9
2	1992	7.8
3	1993	8.3
4	1994	7.4
5	1995	7.1
6	1996	9.2
7	1997	11.5

Ans:



EXTRA QUESTIONS AND ANSWERS:

Q1. What are fossil fuels? Give examples

Ans: Fossil fuels are the exhaustible natural resources formed from the dead remains of living organisms (fossils). Eg. Coal, petroleum and natural gas.

Q2. Name the three coal products.

Ans: The three coal products are 1) coke 2) coal tar 3) coal gas

Q3. What is carbonisation?

Ans- Carbonisation is a slow process of conversion of dead vegetation into coal.

Q4. How are fossil fuels formed?

Ans- Fossil fuels were formed from the dead remains of living organisms millions of year ago.

Q5. Are fossil fuels exhaustible resources?

Ans- Yes, fossil fuel are exhaustible resources.

Q6 Write the characteristics of coal tar and its uses.

Ans: Coal tar is a black thick liquid with unpleasant smell. It is a mixture of about 200 substances

It has both medical and industrial uses. It is used as raw materials for manufacturing of drugs, explosive, perfumes, synthetic dyes, plastics, paints, naphthalene balls, photographic materials etc

Q7. What is coal gas? Write down its uses.

Ans: Coal gas is obtained during the processing of coal to get coke.

It is used in many industries as fuel. Earlier it was used for street lightening in London and New York. Nowadays, It is used as a source of heat rather than light.

Q8. Define petroleum and refining of petroleum.

Ans: Petroleum is a dark oily liquid which has an unpleasant odour. It is a mixture of various constituent such as petroleum gas, petrol diesel, lubricating oil, paraffin wax etc.

The process of separating various constituent/fractions of petroleum is known as refining of petroleum.

Q9. Difference between the formation of coal and petroleum

Ans: Coal is formed with the deposition of plant and trees under high temperature and high pressure whereas petroleum is formed with the deposition of sea organisms under high temperature and high pressure.

Q10. Mention the important uses of coal

Ans: The important uses of coal are-

- It is used as fuel to cook food
- It is used in thermal power plant to produce electricity
- It is also used as fuel in various industry
- Earlier it was used as fuel to run steam powered railway engine

Q11. Why CNG is called clean fuel?

Ans: CNG is called clean fuel because it burns easily. It is smokeless and cause less air pollution as it does not leaves residue on burning.

Q12. Name the place where natural gas is found in our country.

Ans: The places are Tripura, Rajasthan, Maharashtra and Krishna Godavari Delta.

Q13. Write the various constituents of petroleum and their uses.

Ans: The various constituents of petroleum and their uses are

- LPG and CNG are used as fuel for home and industry.
- Petrol are used as motor fuel, aviation fuel and solvent for dry cleaning.
- Diesel are used as fuel for heavy motor vehicles, electric generator.
- Kerosene fuel are used for stoves, lamps and for jet aircrafts.
- Paraffin wax are used for manufacturing candles, ointments, Vaseline etc.
- Bitumen are used for paints and road surfacing.

Q14 Why is petroleum called 'black gold'?

Ans-Petroleum is called black gold because of its great commercial importance. Many useful substances like petrol, diesel, kerosene, LPG etc. are obtained from petroleum after refining. Further processing of it produces many substances called petrochemicals which are used in manufacture of detergents, synthetic fibres, polythene etc.

Q15. How can you save petrol and diesel while driving?

Ans- We can save petrol or diesel while driving by the following ways:

1. Driving at a constant and moderate speed as far as possible.
2. Switching off the engine at traffic lights or at a place where we have to wait.
3. Ensuring correct tyre pressure.
4. Ensuring regular maintenance of the vehicle.

Q16. Can coal, petroleum and natural gas be prepared in the laboratory from dead organisms?

Ans- No, coal petroleum and natural gas can not be prepared in the laboratory from dead organisms because their formation is a very slow process and conditions for their formation cannot be created in the laboratory.