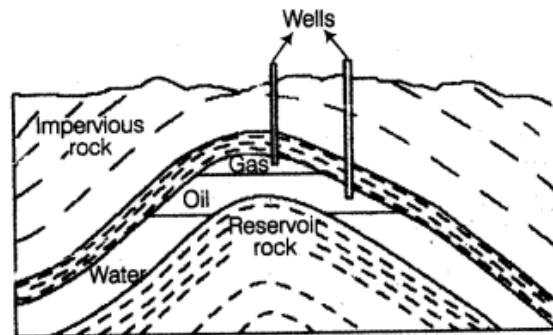




Class: VIII	Department: SCIENCE	Date: 25-08-2022
Worksheet No.: 6	Topic: COAL AND PETROLEUM	NOTE: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

I. VERY SHORT ANSWER (1M)

1. What is meant by fossil fuels? [Fuels formed by natural bacterial decomposition of buried dead plants and animals under extreme heat and pressure.]
2. Define carbonisation. [The slow process of conversion of dead vegetation into coal.]
3. Why is petrol an exhaustible natural resource, whereas sunlight is not? Explain. [Sunlight is present in unlimited quantities in nature whereas it takes millions of years to form petrol from dead remains of organisms.]
4. What is meant by refining petroleum? [The process of separating crude oil into usable components.]
5. 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 which can be decanted later.]
6. Look at the given diagram. Why do we find the oil layer above the water layer?



[oil is less dense than water and both oil and water are immiscible in nature]

7. What is meant by natural resources? Give examples. [Natural resources are the materials present in nature that are useful to human beings. E.g.: soil, air, water, sunlight, coal.]
8. Name the places where natural gas is found in India. [Tripura, Rajasthan, Maharashtra and in the Krishna Godavari delta.]
9. Name the major constituent of natural gas. [Methane]

10. Why is natural gas called a very important fossil fuel these days? [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.]

For questions numbers 11,12 and 13, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

i) Both A and R are true and R is the correct explanation of the assertion.

ii) Both A and R are true but R is not the correct explanation of the assertion.

iii) A is true but R is false.

iv) A is false but R is true

11. **Assertion (A):** Sunlight and air are inexhaustible resources.

Reason(R): These resources are present in unlimited quantities in nature and are not likely to be exhausted by human activities.

Ans: i) Both A and R are true and R is the correct explanation of the assertion.

12. **Assertion (A):** Petroleum is referred to as 'black gold.'

Reason (R): Petroleum resembles molten gold in appearance.

Ans: iii) A is true but R is false.

13. **Assertion (A):** Crude oil has to be refined or purified before its different constituents' can be used.

Reason(R): Petroleum gas, petrol, diesel, kerosene, paraffin wax, and lubricating oil are obtained from refining of petroleum

Ans: ii) Both A and R are true but R is not the correct explanation of the assertion.

II. PASSAGE-BASED QUESTIONS:

Read the passage carefully and answer the following questions.

In the light of the availability of various resources in nature, natural resources can be broadly classified into two kinds- Inexhaustible and Exhaustible resources. Inexhaustible natural resources are present in unlimited quantities in nature and are not likely to be exhausted by human activities. Examples are sunlight, and air. Exhaustible resources are present in limited quantities in nature. They can be exhausted by human activities. Examples of these resources are forests, wildlife, minerals, coal, petroleum, natural gas etc. 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*.

i. Exhaustible natural resources are:

- Unlimited in quantity.
- Not dependent on nature.
- Limited in quantity.
- Not exhausted by human activities.

ii. 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

iii. Which of the following is an exhaustible natural resource?

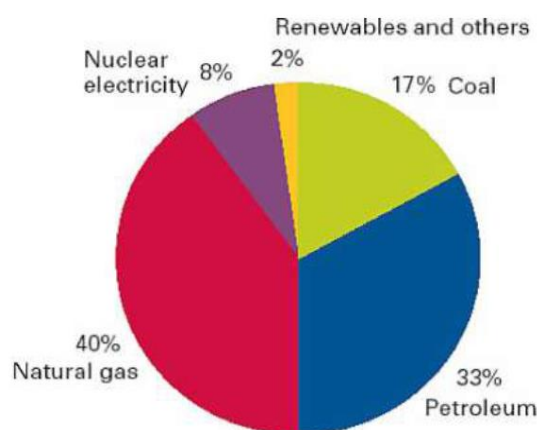
- a. air b. sunlight c. forest d. wind

iv. Identify the fossil fuel/ fuels from the following:

- a. Coal b. Petroleum c. Natural gas d. All of these

III. CASE STUDY-BASED QUESTIONS:

1. This is a pie chart about energy sources in country X in the year 2015. Examine it and answer the questions given alongside:



1. What percentage of fossil fuels did the Country X consume that year?

[90%]

2. Do you find that renewable sources played an important role in the country? Why? [No, because only 2 % of the renewable resources were used.]

3. Mention the names of fossil fuels used by this country. [Coal, petroleum and natural gas]

4. Which fossil fuel used by country X is a clean fuel? [Natural gas]

IV. a) SHORT ANSWER TYPE QUESTIONS (2M):

1. What are petrochemicals? Mention some uses of them. [Petrochemicals are the useful substances obtained from petroleum and natural gas. Uses- manufacturing of detergents, fibres, polythene, fertilisers (urea)]
2. Differentiate between- inexhaustible natural resources and exhaustible natural resources
 - a. [Exhaustible resources- These resources are present in limited quantities in nature, and they can be exhausted by human activities. Examples: Forests, coal, petroleum. minerals, wildlife, natural gas, etc.
 - b. Inexhaustible resources-These resources are present in unlimited quantity in nature and are not likely to be exhausted by human activities. Examples: Sunlight, air, etc.]
3. We say fossil fuels will last only for a few hundred years. Comment. [It takes a very long

time for the formation of fossil fuels. It also requires specific conditions and it doesn't happen quite often. Therefore, their limited stock will last only for a few hundred years]

4. We read in newspapers that the burning of fuels is a major cause of global warming.

Explain why.

[Hint: Burning of fuel will produce carbon dioxide which is a greenhouse gas. This results in global warming. An increase in the amount of carbon dioxide leads to a rise in temperature on the earth, melting of ice caps and glaciers resulting in the rise in sea levels.]

5. Why should we use fossil fuels only when absolutely necessary? [Fossil fuels are exhaustible resources, fossil fuels required millions of years for formation, they increase air pollution and are linked to global warming.]

IV. b) SHORT ANSWER TYPE QUESTIONS (3 M):

1. What does CNG stand for and why is it considered to be a better fuel than petrol? [CNG stands for Compressed Natural Gas. It is considered to be a better fuel because it burns with a smokeless flame and causes no air pollution. It also does not produce any poisonous gases on burning.]
2. Give reasons:
 - a. Petroleum is also called black gold.
[Hint: Great commercial importance]
 - b. We should switch off the engines of vehicles while waiting at traffic lights.[To save petrol or diesel and save for future use]
 - c. Coal, petroleum and natural gas are fossil fuels [They are obtained from dead remains of plants and animals buried under earth's crust millions of years ago]
3. Mention the characteristics of coal. [It is black in colour and as hard as a stone, it mainly consists of carbon, it burns in the presence of air and produces carbon dioxide gas and heat, it is a combustible substance which means that it can be burned, hence it is used as a fuel.]
4. How does the formation of petroleum take place? [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, the absence of air, high temperature and high pressure transformed the dead organisms into petroleum and natural gas.]
5. Write the full form of- PCRA. Mention the tips we must follow to save petrol/diesel while driving? [Petroleum conservation Research association, 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.]

V. LONG ANSWER TYPE QUESTIONS (5 M):

- 1 a. Name the products obtained and their uses when coal is processed in the industry.
[Coal when processed in the industry gives **coke, coal tar and coal gas**. Coke is used in the

manufacture of steel and the extraction of many metals. Coal tar is used as starting material for manufacturing various substances such as synthetic dyes, drugs, explosives, perfumes, paints etc. Coal gas is used as fuel]

b. Mention some of the uses of coal. [It 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 used as fuel in thermal power plants to produce electricity and in various other industries.]

c. What steps would you suggest for the judicious use of fuels? [Hint: (i) We should use fossil fuels only when absolutely necessary. (ii) We can also use natural gas as a substitute. The reserves of natural gas discovered by us have gone up ten times within 20 years. (iii) Alternative sources of energy such as solar, wind and biomass should be used in place of fossil fuels]

2. Prepare a table showing various components of petroleum and also write their uses.

SL NO	CONSTITUENTS OF PETROLEUM	USES
1	Petroleum Gas in Liquid form(LPG)	Fuel for home and industry
2	Petrol	Motor fuel, aviation fuel, solvent for dry cleaning
3	Kerosene	Fuel for stoves, lamps and jet aircraft
4	Diesel	Fuel for heavy motor vehicles, electric generators
5	Lubricating oil	Lubrication
6	Paraffin wax	Ointments, candles, Vaseline etc.
7	Bitumen	Paints, road surfacing

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