

	INDIAN SCHOOL AL WADI AL KABIR		
CLASS: VIII	DEPARTMENT: SCIENCE 2025-26		DATE: 11-08-2025
WORKSHEET NO: 3 WITH ANSWERS	TOPIC: COAL AND PETROLEUM		NOTE: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:		ROLL NO.

I. OBJECTIVE-TYPE QUESTIONS:

1. Read the following statements carefully.

X: It is a thick black coloured liquid which is obtained from coal.

Y: It is a porous, black and almost pure form of carbon.

Z: It is used to run heavy vehicles such as trucks, buses, tractors etc.

X, Y and Z are respectively:

- a) Coal gas, Coke, Petrol
- b) CNG, Bitumen, Diesel
- c) Coal tar, Coke, Diesel
- d) Coke, Coal tar, Petrol

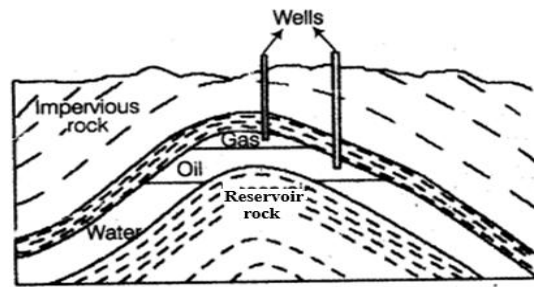
2. A village is planning to install solar panels to generate electricity. Which category of natural resources does solar energy belong to, and why?

- a) Exhaustible, because it can be used up over time.
- b) Exhaustible, because it is limited like coal and petroleum.
- c) Inexhaustible, because it is available in unlimited quantity.
- d) Inexhaustible, because it is formed from fossilised remains.

3. Under which conditions does coal formation take place from plant remains?

- a) High temperature and high pressure
- b) High pressure and cold surroundings
- c) Low pressure and high temperature
- d) Low pressure and cold surroundings

4. The image shows petroleum and natural gas deposits. Why does a layer of oil and natural gas form above water?



- a) Because reservoir rocks allow only water to pass through them.
- b) Because different rock layers separate the three substances.
- c) Because oil releases natural gas, it forms a new layer over the oil.
- d) Because gas and oil are lighter than water, the three substances do not mix.

5. Which of the following statements about petrochemicals is correct?

- a) Petrochemicals are obtained only from coal.
- b) Petrochemicals are used in making plastics, detergents, and synthetic fibers.
- c) Petrochemicals have no industrial applications.
- d) Petrochemicals are not related to petroleum or natural gas.

6. A car manufacturing company is researching different fuels for their vehicles. They want to extract petrol and diesel from crude petroleum. Which process should they use?

- a) Filtration
- b) Sedimentation
- c) Refining
- d) Crystallisation

7. Petroleum was formed from organisms:

- a) living on the land
- b) living in the sea
- c) living on the plants
- d) living on the rocks

For question numbers 8-10, 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**

8. Assertion (A): Coal is used as a fuel in thermal power plants.

Reason (R): Coal burns to produce heat, which is used to generate electricity.

9. Assertion (A): LPG is a solid fuel obtained from petroleum.

Reason (R): LPG does not produce a large amount of smoke and leaves behind ash after burning.

10. Assertion (A): Bitumen is used for road surfacing.

Reason (R): Bitumen is a product obtained from natural gas.

II. VERY SHORT ANSWER TYPE QUESTIONS (2M):

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

[Hint- Petrol is an exhaustible resource because it gets used up and takes millions of years to form. We are using it very fast, so it can run out. Sunlight is abundantly available and will not deplete soon, so it is not exhaustible.]

2. Why can't coal and petroleum be made in laboratories like other synthetic materials?

[Hint: Coal and petroleum are formed through a very slow process, and the conditions required for their formation cannot be created in the laboratory.]

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

[Hint-Decantation can be used to separate a mixture of petroleum and water. The mixture is allowed to stand undisturbed. Since petroleum is lighter than water, it floats on top and can be decanted (poured off) later.]

4. Why should we use fossil fuels economically?

[Hint- We should use fossil fuels economically because:

- They are exhaustible resources – once used up, they cannot be quickly replaced.**

- They take millions of years to form, so we must use them wisely.
- Burning fossil fuels increases air pollution and harms health.
- They are a major cause of global warming and climate change.]

5. Why is refining necessary before using crude petroleum?

[Hint- Refining is necessary before using crude petroleum because crude petroleum is a mixture of many useful substances such as petrol, diesel, kerosene, lubricating oil, etc. These substances have to be separated from crude petroleum through the process of refining, so that they can be used for different purposes.]

III. SHORT ANSWER TYPE QUESTIONS: (3M)

1. Mention the characteristics of coal.

[Hint- The characteristics of coal as follows:

- It is a hard and black substance.
- It is mainly made of carbon.
- It burns to produce heat and light.
- It is used as a fuel in homes and industries.
- It is also used to generate electricity in thermal power plants.]

2. What is CNG? Why is it considered a clean fuel?

[Hint- CNG stands for Compressed Natural Gas.

- It is considered a clean fuel because:
- It produces less smoke and pollutants compared to petrol and diesel.
- It causes less damage to the environment and helps reduce air pollution.]

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

[Hint- Steps for the judicious use of fossil fuels include:

- Use public transport, carpool, walk or cycle whenever possible.
- Switch off engines at traffic lights to save fuel.
- Use energy-efficient appliances.
- Avoid the wastage of electricity and fuel.
- Promote alternative energy sources like solar or wind energy.]

4. Give reasons:

a) Petroleum is also called ‘black gold’. [Hint -Petroleum is called ‘black gold’ because it is black and is very valuable, like gold.]

b) We should switch off the engines of vehicles while waiting at traffic lights. **[Hint-To save fuel and reduce air pollution, we should switch off engines when not moving.]**

c) We should not sleep in a closed room with burning coal. **[Hint-Burning coal in a closed room produces carbon monoxide, a poisonous gas. It can cause suffocation and even death.]**

5. A village has been using firewood as a fuel source for cooking. Why should they switch to LPG? **[Hint- They should switch to LPG (Liquefied Petroleum Gas) because:**

- **It is a cleaner fuel and produces less smoke.**
- **It helps reduce air pollution and protects health.**
- **It also helps in saving trees and preventing deforestation.]**

6. a) How can individuals contribute to reducing petroleum consumption? **[Hint-Individuals can:**

- **Use public transport or carpool.**
- **Maintain vehicles properly to improve fuel efficiency.**
- **Avoid unnecessary use of vehicles.**
- **Use bicycles for short distances.]**

b) Suggest two alternative energy sources that can replace petroleum. **[Hint- Solar and wind energy]**

IV. LONG ANSWER TYPE QUESTIONS (5M):

1. Enlist the products obtained from petroleum and 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

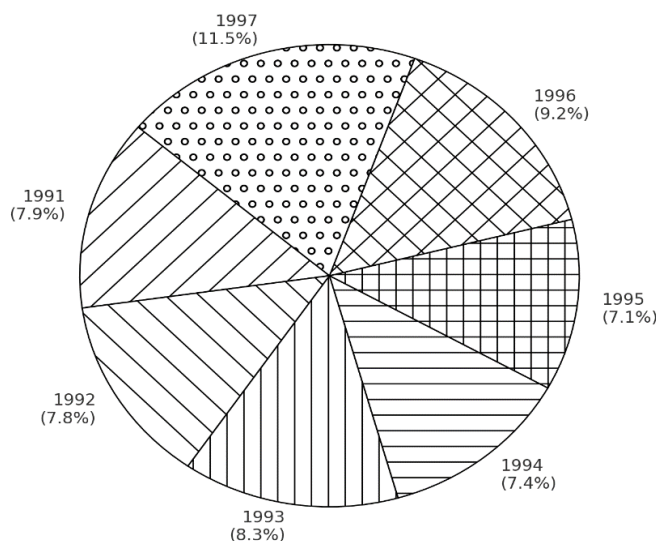
2. Coal is an important fossil fuel that provides various useful products. Describe the products obtained from coal, along with their uses.

[Hint- 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 a starting material for manufacturing various substances such as synthetic dyes, drugs, explosives, perfumes, paints, etc.**
- **Coal gas is used as fuel**

V. CASE STUDY- BASED QUESTIONS/PASSAGE-BASED QUESTIONS:

The pie chart shows the power shortage in India from 1991 to 1997. The lowest shortage was in 1995 (7.1%), while the highest was in 1997 (11.5%). The shortage increased over the years due to higher electricity demand, limited power generation, and fuel supply problems. This affected homes, businesses, and industries. Studying this data helps us understand the need for better power generation and energy-saving methods. To reduce power shortages, we can take several measures, such as increasing the use of renewable energy sources like solar and wind power, improving power plant efficiency, reducing electricity wastage through energy-efficient appliances, and promoting awareness about responsible electricity consumption.



a) In which years was the power shortage the lowest and highest, and what were the percentages?

[Hint- The power shortage was lowest in 1995 at 7.1% and highest in 1997 at 11.5%.]

b) How can the power shortage be reduced?

[Hint- Increasing the use of renewable energy sources like solar and wind., Improving the efficiency of power generation plants, Using energy-efficient appliances and reducing wastage., Promoting public awareness about saving electricity.]

c) What are some reasons for power shortages?

[Hint- The higher electricity demand, limited power generation, and fuel supply problems]

ANSWERS FOR THE QUESTIONS 1 TO 10

- 1. c – Coal tar, Coke, Diesel**
- 2. c – Inexhaustible, because it is available in unlimited quantity**
- 3. a – High temperature and high pressure**
- 4. d – Because gas and oil are lighter than water, and the three substances do not mix**
- 5. b – Petrochemicals are used in making plastics, detergents, and synthetic fibres**
- 6. c – Refining**
- 7. b – Living in the sea**
- 8. i – Both A and R are true, and R is the correct explanation of the assertion**
- 9. iv – A is false, but R is true**
- 10. iii – A is true, but R is false**

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