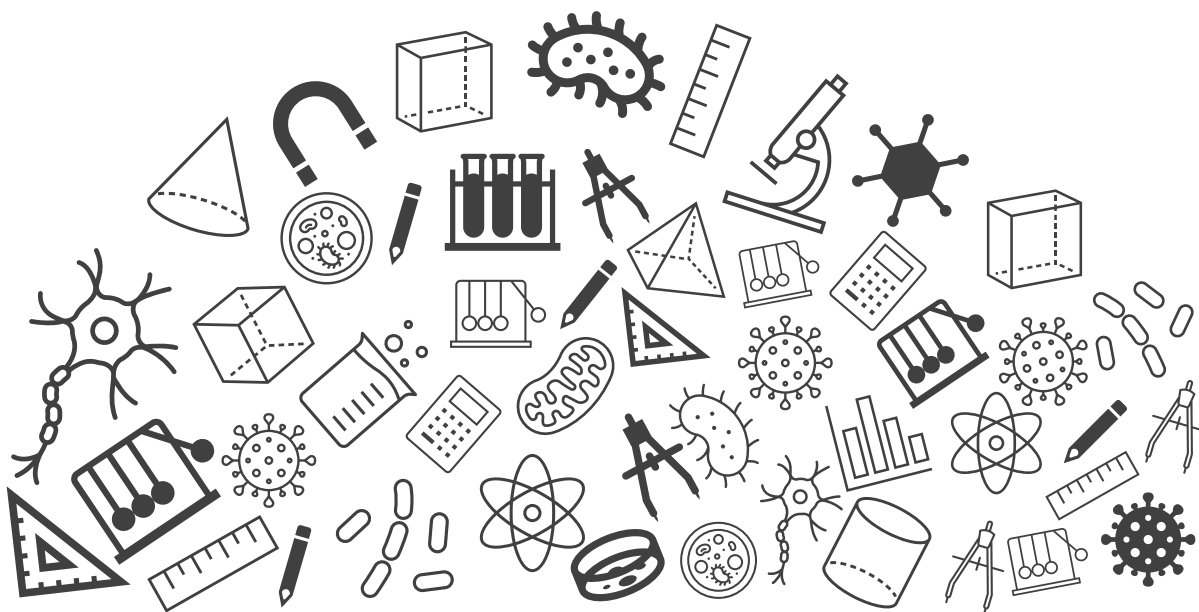




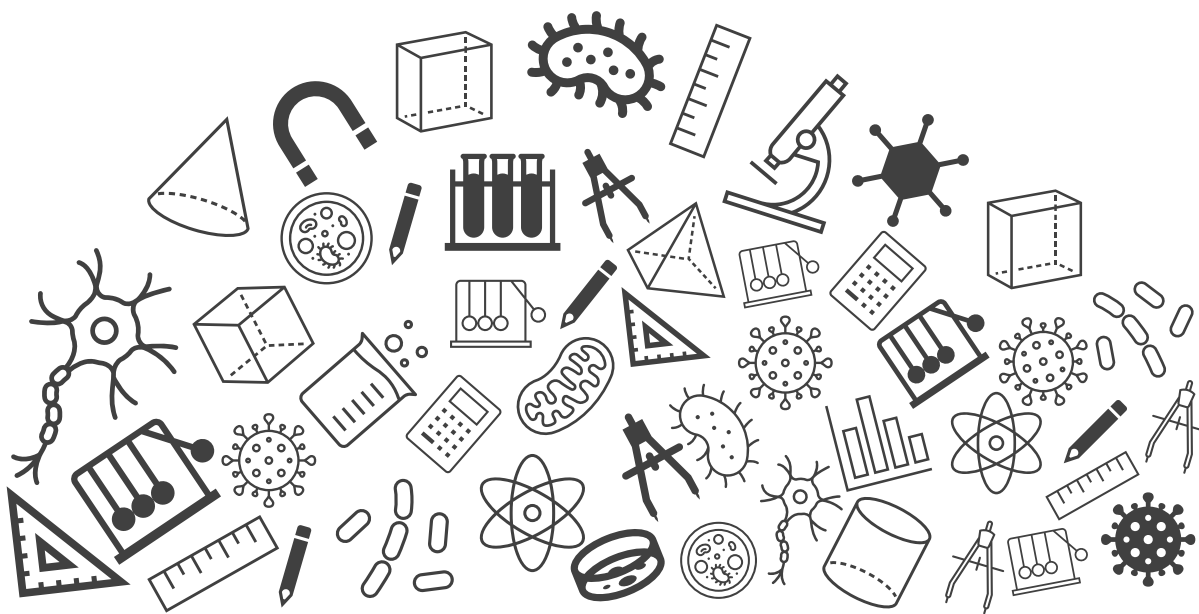
Grade 08 : Science

Exam Important Questions





Coal and Petroleum



Coal and Petroleum

Topic : Exam Important Questions

1. The smoke emission percentages of different fuels is given below. [3 marks]

Fuels	Smoke emission (%)
1. Coal	80-90
2. CNG	5-10
3. Diesel	50-60

- a. Which of the following is the cleanest fuel?
b. Which fuel can be considered the most harmful to the environment?
c. Which fuel is most commonly used in trucks?

- ☐ A. a-1, b- 3, c- 2
☒ B. a-2, b- 1, c- 3
☐ C. a-2, b- 3, c- 1
☐ D. a-1, b- 2, c- 3

Correct answer: Option B [3 marks]

- Smoke emission percentage for CNG is significantly low compared to diesel and coal.
- Hence, CNG is called clean fuel as they are less polluting.
- Gaseous emissions from coal are the highest of all fuels. Thus, burning of coal is harmful to the environment.
- Diesel is most commonly used as a fuel in trucks.
- Hence, the correct option is B.

2. Name the petroleum product used as fuel for stoves, lamps and jet aircrafts. [1 mark]

Kerosene is a petroleum product which is used as fuel for stoves, lamps and jet aircrafts. [1 mark]

Coal and Petroleum

3. Write some important uses of the various constituents of petroleum. [5 marks]

The various constituents of petroleum are separated using the fractional distillation technique. The uses of various constituents of petroleum are:

- Petroleum gas is used as a fuel at homes and in industries. [1 mark]
- Petrol is used as a fuel in automobiles. [1 mark]
- Kerosene is used as a fuel in aircrafts. [1 mark]
- Diesel is used as a fuel in buses, trucks and trains. [1 mark]
- Bitumen is used as a construction material in roofing and for the construction of roads. [1 mark]

4. Explain how petroleum and natural gas are formed. [2 marks]

- Petroleum and natural gas are formed from the dead remains of marine organisms that were buried under the sea. [1 mark]
- High temperature, high pressure, and absence of air over million of years transform these dead organisms into petroleum and natural gas. [1 mark]

5. Write some important uses of any five constituents of petroleum.

[5 marks]

[NCERT Exemplar Q.33]

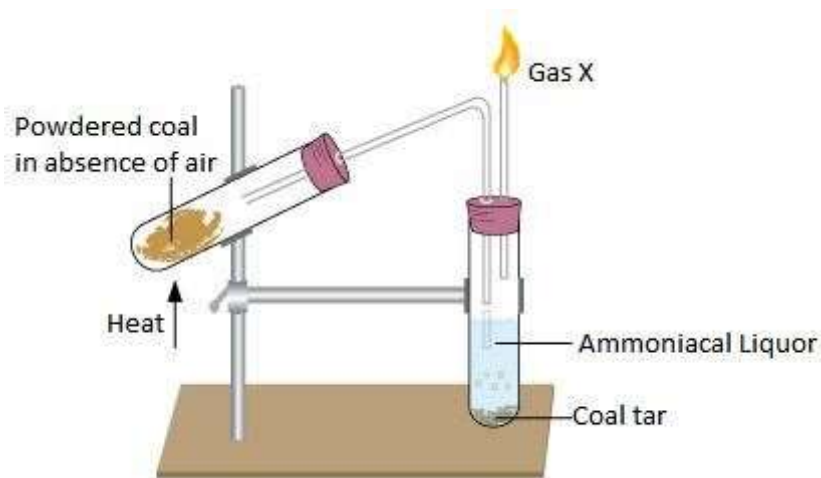
Solution:

Important uses of any five constituents of petroleum are:

- Liquefied Petroleum gas (LPG) is used as a fuel in homes and in industries. [1 mark]
- Petrol is used as a fuel in automobiles. [1 mark]
- Diesel is used as a fuel in buses, trucks and trains. [1 mark]
- Bitumen is used as a construction material in roofing and for the construction of roads. [1 mark]
- Paraffin wax is used in making ointments, candles, vaseline etc. [1 mark]

Coal and Petroleum

6. Identify the process and the gas X released shown in the lab setup, provided below:



- ☒ A. Process- Destructive distillation of coal
Gas released- Carbon dioxide.
- ☒ B. Process- Destructive distillation of coal
Gas released- Coal gas
- ☒ C. Process- Fractional distillation of coal
Gas released- Coal gas
- ☒ D. Process- Fractional distillation of coal
Gas released- Carbon dioxide.

When finely powdered coal is heated in the absence of air, the coal breaks down to form coke, coal tar, ammonia and coal gas. The residue left behind in the first tube is coke. Coal tar settles down at the bottom of the second test tube and the ammonia gas is absorbed by water in the second test tube forming ammoniacal liquor.

Gas X labelled here is coal gas, a combustible gas having a mixture of hydrogen, carbon dioxide and methane and this is verified by introducing a small flame, which burns more brighter.

7. Define destructive distillation of coal. What are the byproducts formed on destructive distillation of coal? [2 marks]

- The process of heating coal in the absence of air is known as the destructive distillation of coal. [1 mark]
- Coke, coal tar and coal gas are the byproducts obtained during the destructive distillation of coal. [1 mark]

Coal and Petroleum

8. Match the given substances with their uses.

[3 marks]

Compounds	Uses
A. Coal gas	1. Cosmetics
B. Coal tar	2. Steel production
C. Coke	3. Power plants

☒ A. A→3, B→1, C→2

☐ B. A→1, B→3, C→2

☐ C. A→3, B→1, C→2

☐ D. A→3, B→2, C→1

Solution: Option A : A→3, B→1, C→2 [3 marks]

- Coke, coal tar and coal gas are the byproducts obtained during the destructive distillation of coal.
- Coal tar is a thick black liquid with an unpleasant smell. It is used in food, medicines, cosmetics and personal care products.
- Coke is a solid, black-grey residue composed mainly of carbon. It is almost a pure form of carbon. It is widely used in steel production and in the metal industry for the extraction of different metals.
- Coal gas is a colourless gas with a distinct odour and a mixture of different gases such as hydrogen, carbon monoxide and methane. It is used as a fuel in power plants.

9. We read in newspapers that burning of fuels is a major cause of global warming. Explain why. [2 marks]

- Most of the fuels are carbon based and on burning release majorly carbon dioxide which is one of the greenhouse gases. [1 mark]
- Excess carbon dioxide in the atmosphere traps more solar radiation and heats up the earth's atmosphere increasing the overall temperature of the earth. [1 mark]
- This results in global warming.

Coal and Petroleum

10. While driving what are the tips we must follow to save petrol/ diesel/natural gas? [4 marks]

The tips we must follow to save petrol/diesel/natural gas are:

1. Switch off the engine at traffic lights or at a place where you have to wait. [1 mark]
2. Ensure correct tyre pressure. [1 mark]
3. Ensure regular maintainance of the vehicle. [1 mark]
4. Drive at a constant and moderate speed. [1 mark]