Case-Based MCQs – Coal and Petroleum (Class 8 Science)

Case Study – 1: Formation of Fossil Fuels

Coal and petroleum are formed from the remains of plants and animals buried deep inside the earth for millions of years. Coal is mainly formed from plants that lived in swampy forests, while petroleum and natural gas are formed from marine organisms. Since these resources take millions of years to form, they are called non-renewable resources.

Q1. Coal is mainly formed from –
a) Marine animals
b) Swamp plants
c) Marine plants
d) Volcanic lava

Q2. Why are coal and petroleum called non-renewable resources?
a) They can be reused many times
b) They can be made in laboratories
c) They take millions of years to form
d) They are easily available

Q3. Which fuel is often called 'buried sunshine'?
a) Coal
b) Petroleum
c) Natural gas
d) LPG

Q4. Which of the following is not a fossil fuel?
a) Coal
b) Petroleum
c) Natural Gas
d) Hydrogen Gas

Q5. Petroleum is formed mainly from –
a) Swamp plants
b) Dead marine organisms
c) Rocks
d) Minerals

Case Study – 2: Petroleum and Its Refining

Petroleum is a dark oily liquid with a characteristic smell. It is a mixture of various hydrocarbons and needs to be refined before use. This refining is done by fractional distillation, which separates petroleum into useful products like petrol, diesel, kerosene, lubricating oil, paraffin wax, and LPG.

Q1. Which process is used to separate petroleum into different products?
a) Distillation of coal

b) Filtration
c) Fractional distillation
d) Sedimentation

Q2. Which petroleum product is used in making candles and ointments?
a) Petrol
b) Kerosene
c) Paraffin wax
d) Lubricating oil

Q3. LPG mainly consists of –
a) Propane and Butane
b) Methane and Ethane
c) Hydrogen and Oxygen
d) Carbon dioxide

Q4. Which of the following is the heaviest fraction obtained during refining?
a) Petrol
b) Diesel
c) Kerosene
d) Bitumen

Q5. Why is refining necessary for petroleum?
a) To give it a good smell
b) To separate useful components
c) To reduce cost
d) To convert it into coal

Case Study – 3: Environmental Impact of Fossil Fuels

Burning of coal and petroleum releases harmful gases like carbon dioxide, carbon monoxide, sulfur dioxide, and nitrogen oxides. These gases cause air pollution, acid rain, and global warming. Therefore, scientists suggest alternative energy sources such as solar energy, wind energy, and bio-gas to reduce dependency on fossil fuels.

Q1. Which gas released from burning fossil fuels is the main cause of global warming?
a) Oxygen
b) Nitrogen
c) Carbon dioxide
d) Sulfur dioxide

Q2. Which of the following is not an alternative source of energy?
a) Solar energy
b) Wind energy
c) Biogas
d) Petrol

Q3. Acid rain is mainly caused by –
a) Oxygen and nitrogen

b) COn and HnO
c) SOn and NOn
d) CO and On

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Q4. Which of the following statements is true?
a) Burning fossil fuels reduces pollution
b) Use of biogas helps in reducing waste
c) Coal is a renewable resource
d) Petroleum reserves are unlimited

Q5. Which of these is the most environment-friendly fuel?
a) Coal
b) Petrol
c) Diesel
d) Natural gas