

Q Differentiate between renewable and non-renewable sources of energy. Briefly explain wind energy, solar energy and biofuels.

Renewable sources

Resources which can be reused are renewable resources.

These include components like air, water, sunlight etc.

They are sustainable resources.

They are eco-friendly.

The rate of renewal is greater than the rate of getting exhausted.

Non-renewable sources

Resources which cannot be reused once utilized are called non-renewable resources.

These include components like fossil fuels, LPG, Crises.

They are exhaustible resources.

They are not eco-friendly.

The rate of renewal is slower than the rate of getting exhausted.

# Solar Power

Solar power is energy from the sun that is converted into thermal or electrical energy. Moreover, photovoltaic cells are used to convert sunlight into electricity. However, solar technologies can be used to harness this energy for a variety of uses including generating electricity, providing light and heating water for domestic, or commercial use.

# WIND ENERGY

The wind is used to produce energy and to turn for the production of electricity. Similarly, wind rotates the blades of a turbine that helps to operate a generator. On operation, the generator, as a result, produces electricity. Thus, the generator converts mechanical energy possessed by the wind into electrical energy. However, wind energy plants are usually installed near seashores or in areas with sufficient wind flow.

# BIOFUELS

Biofuels are renewable energy sources derived from organic materials, such as plants, algae and animal waste.

They are used as alternatives to fossil fuels and can reduce greenhouse gas emissions.

Common types include: Ethanol, Biodiesel  
Biogas.

(a) What do you know about Volcanoes?  
Discuss the causes and affects of  
Volcanic eruption.

## Volcanoes:

A volcano is simply an opening or vent on the earth's surface through which molten magma, escape on to the earth's surface.

"Volcanism refers to the process by which molten rock, known as magma, rises to the earth's surface, resulting in volcanic activity."

## Causes of Volcanic eruption:

Volcanic eruptions are mainly caused by the movement of tectonic plates, which creates pressure that forces magma to rise from beneath the Earth's surface. As magma accumulates in chambers, gas and pressure build up, leading to explosive eruptions.

You can discuss this part by giving points

Factors such as the composition of the magma, the presence of water, and surrounding geological structures also influence the eruption's characteristics.



### 3.5 Effects of Volcanic eruption:

Volcanic eruptions can have profound effects on the environment, human health, and local economies. They release ash and gases, which can cause respiratory issues, contaminate water supplies, and disrupt air travel. The deposition of ash can damage crops and infrastructure, while lava flows can destroy habitats and property.