

# 11. Energy Flow and Conservation of Resources

Fundamentals of Physics  
Revision for competitive  
examinations

## Energy Flow

An ecosystem has  
Biotic organisms and  
Abiotic components.

4. **Laws of Thermodynamics** are applied in Energy flow. These state that (a) **energy can be transformed** from one form into another, but it can **neither be created nor destroyed**.

(b) When energy is put to work, a part of it is **converted into unused form of heat** mainly due to friction and radiation.

1. **Biotic organisms** are producers, consumers, and decomposers of energy.

Photosynthetic plants and bacteria are producers of energy as they convert sunlight energy into edible forms of glucose.

2. Abiotic components include light, heat, rain, humidity, inorganic and organic substances.

They are part of the Carbon cycle

3. Energy is needed for all biotic or life activities.

All living organisms depend on (a) **energy flow** and (b) **nutrition flow**.

Numerous elements are required to regulate the biological activities **and for formation of protoplasm**.

These are called **nutritive elements**.

# Resources

Substances that are useful and significant are Resources. They include Natural Resources and Man made Resources

All Resources

Conservation is management of natural resources for future in addition to their use in the present

Renewable: can be replaced or renewed after use

Non-renewable cannot be replaced after consumption

Principal Natural resources are soil, water, air, forests, minerals, oil, Oceans and marine life, conventional sources of energy such as fossil fuels.

Water, Plants  
Forests,  
Ecosystems that  
have been  
conserved

Re-cycled  
water, paper,  
cloth, plastic,  
etc

All minerals,  
and ecosystems