Sources of Energy(English Medium)

Exercise 87:

Solution 1(a):

The sun, wind, water, atoms, petroleum products, etc. are all different sources of energy.
Solar energy is used for cooking food, heating water, drying clothes and food grains.
Wind energy is used to produce electricity with the help of windmills.
Hydro energy is used to generate hydroelectricity.
Atomic energy is used to produce electricity by fusion of heavy elements.
Petroleum products like petrol, diesel, kerosene and fuel oil are used as fuels in vehicles.

Solution 1(b):

A solar panel is preferable to run a fan because it can provide a voltage of about 230 V which is sufficient to run a fan. On the other hand the voltage obtained by a dry cell is 1.5 V, which is not sufficient to run a fan.

Exercise 88:

Solution 1(a):

The energy sources which we see in our surrounding are the Sun, wind, petrol, biomass, coal, biogas, diesel, flowing water and natural gas.
Let us differentiate them as renewable and non-renewable energy sources.

Renewable energy sources	**Non-renewable** energy sources
Sun, wind, biomass, biogas and flowing water	Petrol, coal, diesel and natural gas

Exercise 90:

Solution 1(a):

There are many petroleum products like petrol, diesel, kerosene, LPG, fuel oil, etc.
The following are the uses of these petroleum products:

1. Petrol is used in vehicles like scooters and cars as a fuel.
2. Diesel is used in vehicles like buses and trucks. It is also used to generate electricity in power plants.
3. Kerosene is used as a fuel in stoves. It is also used to light lamps and petromax.
4. Fuel oil is used as a fuel in ships. It is also used in thermal power plants.

Exercise 93:

Solution 1(a):

When a pinwheel is kept in a place where the wind is blowing, it starts rotating.

Solution 1(b):

The energy required to rotate a pinwheel is obtained from the wind blowing around it.

Exercise 95:

Solution 1(a):

The wheel starts rotating when the tap water falls on its cogs as shown in the image given below.

This is because the energy required by the pinwheel to rotate is obtained by the kinetic energy of the tap water flowing over it.

Exercise 98:

Solution 1:

1. Renewable source of energy
2. Non-renewable source of energy
3. Non-renewable source of energy
4. Renewable source of energy
5. Renewable source of energy
6. Non-renewable source of energy
7. Renewable source of energy
8. Renewable source of energy

9. Renewable source of energy
10. Renewable source of energy
11. Renewable source of energy

Solution 2.1:

Renewable energy sources	Non-renewable energy sources
The sources of energy which can be replenished naturally, immediately or after sometime once they are used are called renewable sources of energy.	The sources of energy which cannot be replenished naturally immediately or after sometime once they are used are called non-renewable sources of energy.
These sources of energy will never get exhausted, so they are known as inexhaustible sources of energy.	These sources of energy will get exhausted some day, so they are known as inexhaustible sources of energy.
Their use does not cause pollution.	Pollution is not caused by their use.
Wind energy, solar energy, hydro energy, biomass energy are examples of renewable sources of energy.	Mineral, coal, petroleum, natural gas and nuclear fuels are examples of non-renewable sources of energy.

Solution 2.2:

The use of energy has increased due to the development in science and technology. Man has indiscriminately started using non-renewable sources like mineral coal and petroleum products. The resources of such energy sources are limited and will get exhausted some day in near future due to excessive use. Due to the increase in demand and limited supply of energy, these energy sources should be used as per requirement so that they will be available in the coming future too. Hence, mineral coal and petroleum products should be used rationally.

Solution 2.3:

Wood is a renewable source of energy because once a tree is cut; more can be planted in its place. But due to urbanisation and demand for a better human habitat, trees are cut causing deforestation. Hence, wood is slowly becoming a non-renewable source of energy.

Solution 2.4:

The steps given below should be followed to save energy at school:

1. All the electrical appliances should be switched off when not in use. For examples lights and fans should be switched off after school.
2. Lights should be switched off if there is enough sunlight in the classroom.
3. Do not waste water and use it according to need.