Ans 9. Work can be defind as transfer of energy. In physics we can say that work is done on an object when you transfer energy to that object. If one object transfer (gives) energy to a second object, then the first object does work on the second object.

Work is the application of a force over a distance. Lifting a weight from the ground and putting it on a shelf is a good example of work. The force is equal to the weight of the object, and the distance is equal to the height of the shelf (W = FXd)

Work - Energy Principle: The change in the kinetic energy of an object is equal to the net work done on the object.

Energy can be defined as the capacity for doing work. The simplest case of mechanical work is when an object is standing still and we force it to move. The energy of a moving object is called kinetic energy. For an object of mass m, moving with velocity of magnitude v, this energy can be calculated from the formula $E = 1/2\ mv^2$

Types of Energy

There are two types of energy in many forms

Kinetic Energy = Energy of Motion

Potential Energy = Stored Energy

Forms of Energy

Solar Radiation - Infrared Heat, Radio Waves, Gamma Rays, microwaves, Ultraviolet Light

Atomic / Nuclear Energy - energy released in nuclear reactions. When a neutron splits an atoms nucleus into smaller pieces it is called fission. When two nuclei are joined together under millions of degrees of heat it is called fusion.

Electrical Energy.

What is Power.

Power is the work done in a unit of time. In other words, power is a measure of how quickly work can be done.

The unit of power is the watt = 1 Joule / 1 second

One common unit of energy is the kilowatt-hour (kWh). If we are using one kW of power, a kWh of energy will last one hour.