Chapter-3

ENERGY

Q1) Fill in the blanks

(a) An electric fan converts electrical energy into _____ energy .

(b) Cooking gas converts _____ energy into heat energy.

(c) Energy possessed by a compressed spring is _____ energy.

(d) The ability to do work is called _____ .

(e) The energy possessed by a body due to its position is called _____ energy.

Q2. Choose the correct option:

I. The unit of work is joule. The other physical quantity that has same unit is
(a) power (b) velocity (c) energy (d) force

II. The spring will have maximum potential energy when
(a) it is pulled out (b) it is compressed
(c) both (a) and (b) (d) neither (a) nor (b)

III. The energy possessed by an oscillating pendulum of a clock is
(a) kinetic energy (b) potential energy
(c) restoring energy. (d) mechanical energy

IV. The gravitational potential energy of an object is due to
a. its mass
b. its acceleration due to gravity
c. its height above the earths surface
d. all of the above.

V. A ball is dropped from a height of 10 m.

a. Its potential energy increases and kinetic energy decreases during the falls
b. Its potential energy is equal to the kinetic energy during the fall.
c. The potential energy decreases and the kinetic energy increases during the fall.
d. The potential energy is 0 and kinetic energy is maximum while it is falling.

Short answer type Questions

1. How work and energy are related?
2. State and define S.I. unit of energy.
3. Define mechanical energy.
4. Define chemical energy.
5. Define nuclear energy.
6. What is dissipation of energy?
7. State the law of conservation of energy.

Long answer type Questions

1) Energy can exist in several forms and may change from one form to another. Give two examples to show the conversion of energy from one form to another.
2) Give one relevant example for each of the following transformation of energy: (i) electrical energy to heat energy. (ii) electrical energy to mechanical energy. (iii) electrical energy to light energy. (iv) chemical energy to heat energy. (v) chemical energy to light energy.

3) Give one example to show that the sum of potential energy and kinetic energy remains constant if friction is ignored.

4)A ball is made to fall freely from a height. State the kind/ kinds of energy possessed by the ball when it is (a) at the highest point (b) just in the middle (c) at the ground

5) State the changes in form of energy while producing hydroelectricity.