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CLASS - VII

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Subject - PHYSICS

Chapter-3 (ENERGY)

Qus1 :→ Define Work done ?

Ans :→ Work is said to be done when we apply force on a body and it moves through certain distance in the direction of force.

Qus2 :→ Write S.I unit of work.

Ans S.I unit of work is Joule (J).

Qus3 :→ Define one Joule ?

Ans :→ One Joule of work is said to be done when a force of one newton moves a body by a distance of One metre (1m) in the direction of force.

Qus4 :→ Define Energy ?

Ans :→ Energy is the Capacity to do work.

Qus5 :→ Write S.I unit of Energy ?

Ans The S.I unit of Energy is Joule (J).

Q6 :→ Write other units of Energy.

Ans :→ 1 Calorie = 4.2 Joule

1 Kilocalorie = 1 KCal = 1000 Calorie = 1000 Cal.

Q7 :→ Name the various forms of Energy ?

Ans
1. Mechanical Energy
2. Heat Energy
3. Light Energy
4. Chemical Energy
5. Sound Energy
6. Magnetic Energy
7. Electrical Energy
8. Atomic energy or Nuclear energy.

Q8:→ Write the two forms of mechanical energy.

Ans (1) Potential Energy (2) Kinetic Energy.

Q9:→ Define (a) Potential Energy (b) Kinetic Energy.

Ans (a) Potential Energy:→ The energy of a body at rest is called potential energy or it is defined as the energy possessed by the body due to its state of rest or position.

For example; A compressed spring has Potential energy stored in it.

(b) Kinetic Energy:→ It is the energy possessed by the body due to its state of motion.

For example; In a river or sea, the flowing water has kinetic energy.

Q10:→ Give an example of conversion of potential energy in to kinetic energy?

Ans:→ A stretched bow has potential energy because of its stretched position. But, when the stretched bow is released, the potential energy of the bow changes it into its kinetic energy.

Q11:→ In an electric motor or in a fan which energy transformation takes place?

Ans:→ In an electric motor or in a fan, Electrical energy changes in to mechanical energy (because this energy rotates the blades of a fan).

Q12:→ Give suitable examples for following Energy transformation

(a) Light energy to Chemical Energy
(b) Chemical energy to mechanical energy
(c) Mechanical energy to electrical energy.
(d) Heat energy to mechanical Energy.
(e) Chemical energy to heat Energy.
(f) Chemical energy to electrical energy.
(g) Electrical to light energy.
(h) Electrical to Sound Energy.
(I) Electrical to mechanical Energy
(J) Electrical energy to heat energy.

Ans (a) light energy to Chemical energy :→ Green plants during photosynthesis Change light energy from sun to chemical energy of food.

(b) Automobile engine Converts Chemical energy in to mechanical energy.

(c) An Electric generator Converts mechanical energy in to electrical energy (as it generates electricity)

(d) Steam engine changes heat energy (heat of steam) in to mechanical energy (engine works)

(e) Burning of wood, Coal, Petrol, diesel or cooking gas converts Chemical energy in to heat energy.

(f) A dry cell or a battery in use converts Chemical energy in to electrical energy.

(g) Tube light and bulbs convert electrical energy to light energy.

(h) Doorbell and loudspeaker

(i) Electric motor or a fan

(j) An Electric iron, heater, oven, geyser, toaster etc. convert electrical energy in to heat energy.

Qus 13:→ What is the Conservation of Energy?

Ans:→ According to this, energy can neither be created nor be destroyed, only can be converted from one form to another or total energy remains constant (conserved) in each transformation of energy.

Q14:→ Give two examples of conservation of energy.

Ans (1) Roller Coaster works on the principle of Conservation of energy

(2) A ball falling vertically

Q15:→ Write the factors on which kinetic energy of a body depends?

Ans:→ (i) Mass of the body :— Greater the mass of the body, greater will be its kinetic energy.

(ii) The Speed of the body :→ More the speed of body, more will be its kinetic energy.

Q16:→ Two bodies A and B ; the body A is of mass 50gm moving with speed 10 m/s and body B is of same mass (50gm) moving with speed 30 m/s. Which one of these two possess more kinetic energy?

Ans 16:— Both bodies A and B have same mass. So body which is having more speed has more kinetic energy (because more the speed more will be kinetic energy) therefore Body B possess more Kinetic energy (K.E)

Q.17 :→ Two toy Cars A and B of masses 10 gm and 60 gm respectively are moving with same speed; which of the two has greater kinetic energy (K.E)?

Ans :→ The Body B of mass 60 gm possess more K.E because more the mass, more will be its K.E.

Q.17 :→ Name the type of energy (kinetic or Potential) possessed by the following.

(a) A moving Cricket Ball
(b) A moving Bus
(c) A Compressed spring
(d) A stone at rest on the top of Building
(e) A stretched Rubber Band
(f) A Bullet fired from a gun.

Ans (a) Kinetic Energy
(b) Kinetic Energy
(c) Potential Energy
(d) Potential Energy
(e) Potential Energy
(f) Kinetic Energy.