SUBJECT:- PHYSICS   CLASS:- IXTH   DATE:19/07/XX

SUBJECT TEACHER:- MR. NEEL NIRANJAN

CHAPTER 4. (WORK, ENERGY & POWER)(BASED ON NCERT PATTERN)

Q1. What is the kinetic energy of an object?

Ans. The energy possessed by an object due to its motion is called kinetic energy of that object.

$$K.E. = \frac{1}{2}mv^2.$$

Where m is mass of the object and v is velocity of the object.

Q3. The kinetic energy of an object of mass, m moving with a velocity of 5 m/s is 25 J. What will be its kinetic energy when its velocity is doubled? What will be its kinetic energy when its velocity is increased three times.

Ans.   K.E. = 25 J,
          v = 5 m/s

$$K.E. = \frac{1}{2} mv^2$$

$$25 = \frac{1}{2} m(5)^2$$

m = 2kg

(i) If velocity is doubled = 10 m/s, m = 2kg

$$K.E. = \frac{1}{2} mv^2$$

$$= \frac{1}{2} (2) \times (10)^2$$

$$= 100J$$

(ii) (If velocity is 3 times v = 15 m/ s, m = 2 kg

$$K.E. = \frac{1}{2} mv^2$$

$$= \frac{1}{2} \times 2\,0215\,(15)^2$$

$$= 225J$$