MIND MAP

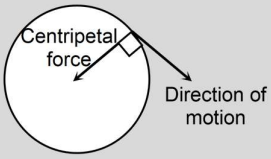
WORK

- Work done on an object is defined as the magnitude of the force multiplied by the distance moved by the object in the direction of the applied force. The unit of work is joule.

  1 Joule = 1 Newton × 1 metre.

  Work done = force × distance $= F \times s$

- Work done by a force acting obliquely is equal to $W = F \cos\theta \times s$
- Work done on a body moving in circular path is zero.



ENERGY

- The energy of a body is its capacity of doing work the S. I. unit of energy is Joule

  (1 KJ = 1000 J).

- Form of energy kinetic energy, heat energy light energy etc.
- Kinetic energy is the energy possessed by a moving body by virtue of its motion.
- Kinetic energy $= \frac{1}{2}mv^2$.
- Potential energy is the energy possessed by the body due to its position or shape.
- potential energy = mgh
- Law of conservation of energy states that whenever energy gets transformed from one form to another, the total energy remains unchanged. i.e., energy can neither be created nor destroyed

POWER

- Power is defined as the rate of doing work. S.I. unit of power is Watt. (W).
- Commercial unit of energy is kWh (kilowatt –hour).

  1 kWh = 3.6×10^6 J

  $P = \frac{W}{t}$

  $P = \frac{E}{t}$

  $1\ h.p. = 746W$