1. (b) Fraction of length of the chain hanging from the table

⇒ 

Work done in pulling the chain on the table

*L*/*n*





1. (c) When a force of constant magnitude which is perpendicular to the velocity of particle acts on a particle, work done is zero and hence change in kinetic energy is zero.
2. (a) The ball rebounds with the same speed. So change in it's Kinetic energy will be zero *i.e.* work done by the ball on the wall is zero.
3. (b) 
4. (a) K.E. acquired by the body = work done on the body

*i.e.* it does not depend upon the mass of the body although velocity depends upon the mass

 [If *F* and *s* are constant]

1. (d)   *units*
2. (a) As surface is smooth so work done against friction is zero. Also the displacement and force of gravity are perpendicular so work done against gravity is zero.
3. (c) Opposing force in vertical pulling = *mg*

But opposing force on an inclined plane is *mg* sin*θ*, which is less than *mg*.

1. (c) Velocity of fall is independent of the mass of the falling body.
2. (a) Work done 



1. (a) The kinetic energy of mass is converted into potential energy of a spring

⇒ 

1. (a) This condition is applicable for simple harmonic motion. As particle moves from mean position to extreme position its potential energy increases according to expression  and accordingly kinetic energy decreases.
2. (c) Potential energy 

∴[if *k* = constant]

If elongation made 4 times then potential energy will become 16 times.

1. (b)
2. (d)  ⇒ ∴
3. (a) If *x* is the extension produced in spring.

 ⇒ = 

1. (a) 
2. (b) ⇒  ⇒ 
3. (d) Condition for stable equilibrium 

⇒  ⇒ 

⇒ ⇒ ⇒ 

1. (d) Friction is a non-conservative force.
2. (a) *P = Fv *
3. (b) *P = Fv* 
4. (d) *P*= 
5. (d) *P* = ⇒ *m =* *kg*

As volume = ⇒ 

Volume = 

1. (c) ⇒ 
2. (c) Force required to move with constant velocity

∴ Power = *FV*

Force is required to oppose the resistive force *R* and also to accelerate the body of mass with acceleration *a*.

∴ Power = 

1. (d) =
2. (a) 
3. (a) 
4. (c) Volume of water to raise = 22380 *l* = 22380×10–3*m*3

 ⇒ 

*t**min*