



STEPPING STONE SCHOOL (HIGH)

CLASS – IX

Subject: PHYSICS

Topic: Answers to worksheets

Date: 20.6.2020

Answers to worksheet no: 10

Answer 1:

- (a) frictional force
- (b) magnetic force

Answer 2:

- (a) contact force
- (b) non-contact force

Answer 3:

Distance is the factor.

Magnitude of force decreases as the distance increases.

Answer 4:

Gravitational force will become four times.

Answer 5:

(i) a force when applied on a non-rigid body changes the inter-spacing between its constituent particles and therefore causes a change in its dimensions

(ii) a force when applied on a rigid body does not change the inter-spacing between its constituent particles and therefore does not change the dimensions of the object.

Answers to worksheet no: 11

Answer 1:

force

Answer 2:

Force of friction between the ball and table top opposes the motion

Answer 3:

Mass of the body.

Greater the mass of the body, greater is the inertia

Answer 4:

Force is that external cause which tends to change the state of rest or the state of motion of an object

Answer 5:

No, the body does not move, Net force on the body is zero, so the body will remain stationary due to inertia of rest

Answer 6

(i) The reason is that the part of the carpet where the stick strikes, comes in motion at once, while the dust particles settled on its fur, remain in position due to inertia of rest.

(ii) The reason is that when the stem of the tree are shaken, they come in motion, while the fruits due to inertia remain in the state of rest.

Answers to worksheet no: 12

Answer 1:

Linear momentum of a body is the product of its mass and velocity

S.I unit is kg ms^{-1}

Answer 2:

(i) Mass is the measure of unertia .

Ratio of their inertia = $m : 2m$

$$= 1 : 2$$

(ii) Momentum of ball A = $m \times 2v$

$$= 2mv$$

Momentum of ball B = $2m \times v$

$$= 2mv$$

Ratio of momentum = $2mv : 2mv$

$$= 1 : 1$$

(iii) Force = mass \times acceleration

$$= m \times a$$

$$F(\text{ball A}) = m \times \frac{2v}{t}$$

$$F(\text{ball B}) = m \times \frac{v}{t}$$

When t is the time

Ratio of force needed

$$= \frac{2mv}{t} : \frac{2mv}{t}$$

$$= 1 : 1$$

Answer 3:

Force = mass \times acceleration

Two conditions are needed

(i) when velocities are much smaller than the velocity of light

(ii) when mass remains constant

Answer 4:

S.I unit of force is newton, one newton is the force which when acts on a body of mass 1kg produces an acceleration of 1ms^{-2}

Answer 5:

When a glass vessel falls from a height on a hard floor, it comes to rest almost instantaneously so the floor exerts a large force on the vessel and it breaks. But if it falls on a carpet, the time duration in which the vessel comes to rest, increases and so the carpet exerts a less force on the vessel and it does not break.

Answer 6:

Linear momentum = mass \times velocity

$$= 5\text{kg} \times 2\text{ms}^{-1}$$

$$= 10 \text{ kg ms}^{-1}$$

Answer 7:

Force = 15 N

Mass = 2kg

Acceleration = $\frac{\text{Force}}$

Mass

$$= \frac{15 \text{ N}}{2\text{kg}}$$

$$= 7.5 \text{ ms}^{-2}$$

