Class-11-Physics Worksheet

Chapter-4

Laws of motion

1.The force required to produce an acceleration of 2 m/s? on a mass of 2 kg is

(a) 4 N

(b) 10 N

(c) 22 N

(d) 18 N

2. A body of mass 5 kg is travelling with a uniform velocity of 2 m/s. Its momentum is

(a) 10 kg m/s

(b) 7 kgm/s

(c) 2.5 kg m/s

(d) 3 kg m/s

3. A bullet of mass 25 g moving with a velocity of 200 cm/s is stopped within 5 cm of the target. The average resistance offered by the target is

(a) 1 N

(b) 2 N

(c) 3 N

(d) 4 N

4. The mass of a body is 2 kg. Its weight is

(a) 19.6 N

(b) 20 N

(c) 30 N

(d) 40 N

5. A body is sliding down a rough inclined plane which makes an angle of 30 degree with the horizontal. It the coeffcient of friction is 0.26, the acceleration in m/s^2 is

(a) 1.95

(b) 2.78

(c) 3.47

(d) 4.6

6. A gun of mass 1000 kg fires a projectile of mass 1 kg with a horizontal velocity of 100 m/s. The velocity of recoil of the gun in the horizontal direction is

(a) 5 m/s

(b) 0.1 m/s

(c) 15 m/s

(d) 20 m/s

7. A particle of mass 0.3 kg is subjected to a force F=-kx with k = 15 N/m. What will be its initial acceleration if it is released from a point 20 cm away from the origin?

(a) 15 m/s^2

(b) 3m/s^2

(c) 10 m/s^2

(d) 5 m/s^2

8.Two bodies of masses 4 kg and 5 kg are acted upon by the same force. If the acceleration of lighter body is 2 , the acceleration of heavier body is

(a) 1 m/s^2

(b) 1.2 m/s^2

(c) 1.6 m/s^2

(d) 1.8 m/s^2

9. When a ball of mass = 5kg hits a bat with a velocity = 3 m/s, in positive direction and it moves

back with a velocity = 4 m/s, find the impulse in SI units

   a. 1.5
   b. 2.15
   c. 3.25
   d. 4.35

10. A soldier is firing 20 bullets per second from his gun having a muzzle speed of 150 m/s. The mass of each bullet is 50 g. If they strike the wall and rebound with the same speed, then the force on the wall is

   a. 75 N
   b. 150 N
   c. 300 N
   d. 600 N