6 Lecture - PHY101

Important Mcqs

A 10 kg object is placed on a surface with a coefficient of static friction of 0.4. What is the maximum force that can be applied to the object before it begins to move?

A. 4 N

B. 40 N

C. 100 N

D. 400 N

Answer: B. 40 N

A 2 kg object is accelerating at a rate of 5 m/s^2. What is the net force acting on the object?

A. 0.4 N

B. 2.5 N

C. 5 N

D. 10 N

Answer: D. 10 N

A 1000 kg car is traveling at a speed of 20 m/s. If the brakes are applied and the car comes to a stop in 5 seconds, what is the average force exerted on the car by the brakes?

A. 4000 N

B. 8000 N

C. 10000 N

D. 20000 N

Answer: C. 10000 N

An object with a mass of 5 kg is suspended from the ceiling by a rope. What is the tension in the rope?

A. 5 N

B. 9.8 N

C. 49 N

D. 50 N

Answer: B. 9.8 N

A 20 kg object is sliding down a frictionless incline with an acceleration of 2 m/s^2. What is the angle of the incline?

A. 11.3 degrees

B. 22.6 degrees

C. 30 degrees

D. 45 degrees

Answer: B. 22.6 degrees

A 5 N force is applied to an object with a mass of 2 kg. What is the acceleration of the object?

A. 0.4 m/s^2

B. 2.5 m/s^2

C. 5 m/s^2

D. 10 m/s^2

Answer: D. 10 m/s^2

An object with a mass of 10 kg is on a surface with a coefficient of kinetic friction of 0.3. If a force of 50 N is applied to the object, what is its acceleration?

A. 1 m/s^2

B. 2 m/s^2

C. 3 m/s^2

D. 5 m/s^2

Answer: A. 1 m/s^2

A 1 kg object is traveling at a speed of 10 m/s. What force is required to bring the object to a stop in 5 seconds?

A. 2 N

B. 10 N

C. 20 N

D. 50 N

Answer: C. 20 N

An object with a mass of 2 kg is pushed with a force of 10 N. What is the acceleration of the object?

A. 2.5 m/s^2

B. 5 m/s^2

C. 10 m/s^2

D. 20 m/s^2

Answer: B. 5 m/s^2

An object with a mass of 10 kg is traveling at a speed of 5 m/s. What force is required to double the object's speed in 5 seconds?

A. 5 N

B. 10 N

C. 25 N

D. 50 N

Answer: D. 50 N