8 Lecture - PHY101

Important Mcqs

Which of the following is the correct formula for momentum?

A) P = mv

B) P = ma

C) P = Fnet

D) P = KE

Answer: A

A 5 kg object is moving with a velocity of 10 m/s. What is its momentum?

A) 10 kg m/s

B) 20 kg m/s

C) 50 kg m/s

D) 100 kg m/s

Answer: B

What is the unit of momentum?

A) kg

B) m/s

C) N

D) kg m/s

Answer: D

Which of the following is an example of an inelastic collision?

A) Two pool balls colliding and bouncing off each other

B) A ball being dropped from a height and bouncing back up

C) A car colliding with a wall and coming to a stop

D) A rocket accelerating in space

Answer: C

If the net force acting on an object is zero, what happens to its momentum?

A) It increases

B) It decreases

C) It remains constant

D) It becomes negative

Answer: C

According to the law of conservation of momentum, in a closed system, what happens to the total momentum before and after a collision?

A) It decreases

B) It increases

C) It remains constant

D) It becomes negative

Answer: C

Which of the following is an example of an isolated system?

A) A moving car

B) A tennis ball being hit by a racquet

C) A rocket launching into space

D) A stationary block on a table

Answer: D

What is the relationship between impulse and momentum?

A) Impulse is equal to the change in momentum

B) Impulse is equal to the initial momentum

C) Impulse is equal to the final momentum

D) Impulse is not related to momentum

Answer: A

What is the difference between elastic and inelastic collisions?

A) Elastic collisions conserve kinetic energy, while inelastic collisions do not

B) Elastic collisions result in objects sticking together, while inelastic collisions result in objects bouncing off each other

C) Elastic collisions result in a change in momentum, while inelastic collisions do not

D) Elastic collisions are only possible in space, while inelastic collisions occur on Earth

Answer: A

Two objects with masses of 2 kg and 4 kg, respectively, are moving towards each other with velocities of 3 m/s and -2 m/s. What is the total momentum of the system?

A) 2 kg m/s

B) -2 kg m/s

C) 6 kg m/s

D) -6 kg m/s

Answer: B