Question 1.

Which of the following statements is not correct for an object moving along a straight path in an accelerated motion?

(a) Its speed keeps changing

(b) Its velocity always changes

(c) It always goes away from the Earth

(d) A force is always acting on it

Answer: (d) A force is always acting on it

Question 2.

According to the third law of motion, action and reaction

(a) always act on the same body

(b) always act on different bodies in opposite directions

(c) have same magnitude and directions

(d) act on either body at normal to each other

Answer: (b) always act on different bodies in opposite directions

Question 3.

A goalkeeper in a game of football pulls his hands backwards after holding the ball shot at the goal. This enables the goalkeeper to

(a) exert larger force on the ball

(b) reduce the force exerted by the balls on the hands

(c) increase the rate of change of momentum

(d) decrease the rate of change of momentum

Answer

Answer: (d) decrease the rate of change of momentum

Question 4.

The inertia of an object tends to cause the object

(a) to increase its speed

(b) to decrease its speed

(c) to resist any change in its state of motion

(d) to decelerate due to friction

Answer: (c) to resist any change in its state of motion

Question 5.

A passenger in a moving train tosses a coin which falls behind him. It means that motion of the train is

(a) accelerated

(b) uniform

(c) retarded

(d) along circular tracks

Answer: (a) accelerated

Question 6.

An object of mass 2 kg is sliding with a constant velocity of 4 ms-1 on a frictionless horizontal table. The force required to keep the object moving with the same velocity is

(a) 32 N

(b) 0 N

(c) 2 N

(d) 8 N

Answer: (b) 0 N

From newton’s Ist law of motion, since there is no external force acting on the object it will remain in its original state of motion. Hence, zero force is required to keep the object moving with constant velocity, correct answer is B.

Question 7.

Rocket works on the principle of conservation of

(a) mass

(b) energy

(c) momentum

(d) velocity

Answer: (c) momentum

Question 8.

A water tanker filled up to ⅔ of its height is moving with a uniform speed. On a sudden application of brakes, the water in the tank would

(a) move backward

(b) move forward

(c) be unaffected

(d) rise upwards

Answer: (b) move forward

Question 9.

If the mass of a body is doubled and its velocity becomes half, then the linear momentum of the body will

(a) remain same

(b) become double

(c) become half

(d) become four times.

Answer: (a) remain same

Question 10.

When a number of forces acting simultaneously on a body bring about a change in its state of rest or of uniform motion in a straight line, then these forces acting on the body are said to be

(a) balanced forces

(b) equal forces

(c) unbalanced forces

(d) opposite forces

Answer: (d) opposite forces

Question 11.

When a car at high speed makes a sharp turn, the driver in a car tends to get thrown to the side opposite to the turn. This is due to the

(a) inertia of motion

(b) inertia of time

(c) inertia of rest

(d) inertia of direction

Answer: (a) inertia of motion

Question 12.

A man is standing on a boat in still water. If he walks towards the shore, then the boat will

(a) move away from the shore

(b) move towards the shore

(c) remain stationary

(d) none of these

Answer: (a) move away from the shore

Question 13.

Which of the following is an incorrect statement?

(a) Mass is measure of inertia of a body.

(b) Newton’s first law of motion is the law of inertia.

(c) Unbalanced force produces constant velocity.

(d) Newton’s third law talks about the direction of the force.

Answer: (c) Unbalanced force produces constant velocity.

Question 14.

A ball is thrown vertically upward in a train moving with uniform velocity. The ball will

(a) fall behind the thrower

(b) fall ahead of the thrower

(c) return back to the thrower

(d) fall on the left of the thrower

Answer: (c) return back to the thrower

Question 15.

Which of the following is not an application of conservation of linear momentum?

(a) While firing a bullet, the gun must be held tight to the shoulder

(b) When a man jumps from a boat to the shore

(c) A rocket explodes on midway from the ground

(d) A body suspended from the hook of a spring balanced in a lift which is accelerated downward

Answer: (c) A rocket explodes on midway from the ground

Question 16.

When we stop pedalling, the bicycle begins to slow down. This is because of the

(a) Frictional force acting along the direction of motion of bicycle

(b) Air resistance which is in the direction of motion

(c) Frictional force acting opposite to the direction of motion of bicycle by the road

(d) Nature of the bicycle to stop after some time

Answer: (d) Nature of the bicycle to stop after some time

Question 17.

Inertia is the property of a body by virtue of which, it cannot change by itself

(a) its state of rest

(b) its steady state of uniform motion

(c) its direction of motion

(d) all of these.

Answer: (d) all of these.

Question 18.

An athlete does not come to rest immediately after crossing the winning line due to the

(a) inertia of motion

(b) inertia of rest

(c) inertia of direction

(d) none of these

Answer: (a) inertia of motion

Question 19.

A bullet of mass A and velocity B is fired into a wooden block of mass C. If the bullet gets embedded in the wooden block, then the magnitude of velocity of the system just after the collision will be

(a) (A+B)/AC

(b) (A+C)/B+C

(c) (AC)/B+C

(d) (AB)/A+C

Answer: (d) (AB)/A+C

Question 20.

The masses of two bodies are in ratio 5 : 6 and their velocities are in ratio 1 : 2. Then their linear momentum will be in the ratio

(a) 5 : 6

(b) 1 : 2

(c) 12 : 5

(d) 5 : 12

Answer: (d) 5 : 12