

CBSE Class 9 Science NCERT Exemplar Solutions Chapter - 9 Force and Laws of Motion

Multiple Choice Questions

1. Which of the following statement 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

Ans. (c) It always goes away from the earth

Explanation: To move away from the earth, an object needs the acceleration which should be more than the acceleration due to gravity of the earth. Only moving on a straight path is not enough for an object to escape the gravitation of the earth.

2. According to the newton's 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 the same magnitude and directions
- (d) act on either body at normal to each other

Ans. (b) always act on different bodies in opposite directions

Explanation: Action and reaction act on different bodies but in opposite directions. They have the same magnitude.

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

(a) exert a larger force on the ball



(b) reduce the force exerted by the ball on hands (c) increase the rate of change of momentum

(d) decrease the rate of change of momentum

Ans. (b) reduce the force exerted by the ball on hands

Explanation: Pulling the hand backward allows enough time to reduce the momentum of the ball. This helps in reducing the force exerted by the ball on hands.

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

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

Explanation: Inertia is the property due to which an object resists any change in its state of motion.

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

Ans. (a) accelerated

Explanation: Had the motions of the train been uniform, the coin would have fallen in his hand. Had the motion been retarded, the coin would have fallen ahead of him. So, the motion is accelerated because it falls behind him

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

Ans. (b) 0 N

Explanation: Since no friction is opposing the motion, hence no force is required to keep the object in uniform motion.

7. Rocket works on the principle of conservation of

(a) mass (b) energy (c) momentum (d) velocity

Ans. (c) Momentum

Explanation---The high velocity of hot gasses which is coming out from the rocket is balanced by the up move of the rocket. This gas has large momentum and an equal momentum is acted to the rocket in opposite direction due to which rocket moves upward. Their conservation of momentum is working.

8. A water tanker filled up to 2/3 of its height is moving with a uniform speed. On sudden application of the brake, the water in the tank would

- (a) move backward(b) move forward
- (c) be unaffected
- (d) rise upwards

Ans. (b) move forward

Explanation: On sudden application of brake, the tanker would come to rest but water would remain in motion. Due to this, the water in the tank would move forward.