

Chapter-2

Worksheet-3

Section 1

Q1. What is the relationship between mass and inertia? Explain with the help of examples.

Q2. Why does a boat tend to leave the shore, when passengers are alighting from it?

Q3. Describe our walking in terms of Newton's third law of motion.

Q4. Why does a cricket player move his hand backward while catching the ball?

Q5. Two identical bullets are fired one by a light rifle and the other by a heavy rifle with the same force. Which rifle will hurt the shoulder more and why?

Q6. When a force acting on a body has equal and opposite reaction, then why should the body move at all?

Q7. Derive the mathematical formula of conservation of momentum.

Q8. Deduce Newton's first law from the second law.

Q9. When small boy is trying to push a heavy stone, mention various forces acting on the stone.

Q10. Describe in brief an activity to illustrate the property of inertia of rest.

Section 2

Q11. While dusting a carpet we suddenly jerk or beat it with a stick because

a) Inertia of rest

- b) Inertia of motion
- c) Absence of inertia
- d) None of these

Answer: a

Q12. Newton's first law of motion is also called the

- a) Law of Force
- b) Law of Mass
- c) Law of Inertia
- d) Law of Speed

Answer: c

Q13. A cyclist does not come to rest immediately after he stops pedaling due to the

- a) Inertia of rest
- b) Inertia of motion
- c) Absence of inertia
- d) None of these

Answer: b

Q14. While flying, the birds push the air

- a) Upward
- b) Downward
- c) Sideward
- d) Backward

Answer: b

Q15. If the weight of a person on the surface of the earth is 600N, then his weight on the surface the moon is.

- a) 600 N

- b) 50 N
- c) 100 N
- d) 0 N

Answer: c

Q16. If two balls of same masses are dropped on sand, the depths of penetration is same if

- a) Heavier ball is dropped faster than lighter ball
- b) Lighter ball is dropped faster than heavier ball
- c) the product ' mv ' is same for both bodies
- d) None of these

Answer: c

Q17. The rate of change of momentum of an object is proportional to

- a) Mass of the body
- b) Velocity of the body
- c) Net force of the body
- d) None of these

Answer: c

Q18. Impulse =

- a) $F \times t$
- b) $m\Delta V$
- c) Ma
- d) Both a and b

Answer: d

Q19. 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

Q20. An athlete does not come to rest immediately after crossing the winning line due to the

- a) Inertia of rest
- b) Inertia of motion
- c) Absence of inertia
- d) None of these

Answer: b