CBSE 9TH FORCE AND LAWS OF MOTION

1) What is the momentum of an object of mass m, moving with a velocity v?
(a) $(mv)^2$ (b) mv^2 (c) $\frac{1}{2}mv^2$ (d) mv.

2) If a bus starts suddenly, the passengers in the bus will tend to fall
(a) in the direction opposite to the direction of motion of the bus
(b) in the same direction as the direction of motion of the bus (c) sideways (d) none of the above

3) An athlete runs some distance before taking a long jump because
(a) he gains energy to take him through long distance (b) it helps him to apply large force
(c) by running action and reaction forces increase
(d) by running the athlete gives himself larger inertia of motion

4) A rider on a horseback falls back when horse starts running all of a sudden because
(a) rider is taken back (b) rider is suddenly afraid of falling
(c) inertia of rest keeps the upper part of body at rest whereas lower part of the body moves forward with the horse.
(d) none of the above

5) The above problem can be explained on the basis of the property of
(a) inertia (b) force (c) torque (d) momentum

6) The combined effect of mass and velocity is taken into account by a physical quantity called
(a) torque (b) momentum (c) moment of force (d) moment of momentum

7) momentum gives a measure of
(a) mass (b) weight (c) velocity (d) quantity of motion

8) Qualitative definition of force is given by
(a) Newton's first law of motion (b) Newton's second law of motion
(c) Newton's third law of motion (d) Newton's law of gravitation

9) SI unit of force is
(a) kg-m/s (b) newton (c) dyne (d) kg-wt

10) $N \quad kg^{-1}$ is a unit of
(a) velocity (b) acceleration (c) force (d) none of these

11) The rate of change of momentum w.r.t. time is measures in
(a) $kg \quad ms^{-2}$ (b) $kg \quad ms^{-1}$ (c) kg m (d) kg

12) A force of 15 N acts separately on two bodies of masses 3 kg and 5 kg. The ratio of the accelerations produced in the two cases will be
(a) 5 : 3 (b) 3 : 5 (c) 8 : 15 (d) 15 : 8

ANSWERS

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13) A block of mass M is pulled with a force F along a smooth horizontal surface with a rope of mass m. The acceleration of the block will be

(a) $\frac{F}{M}$ (b) $\frac{F}{m}$ (c) $\frac{F}{M+m}$ (d) $\frac{F}{M-m}$

14) On applying a constant force to a body, it moves with uniform

(a) momentum (b) speed (c) acceleration (d) velocity

15) A number of discs, each of momentum M kg-m/s, are striking a wall at the rate of n disc per minute. The force associated with these discs, in newtons, would be

(a) $\frac{Mn}{60}$ (b) 60 Mn (c) $\frac{M}{60n}$ (d) $\frac{n}{60M}$

16) A train drop of mass 0.1g is falling with uniform speed of $10cm^{-1}$ What is the net force acting on the drop?

(a) zero (b) $10^{-3}N$ (c) $2 \times 10^{-2}N$ (d) $10^{-2}N$

17) $kg - m/s^2$ is the unit of

(a) momentum (b) speed (c) acceleration (d) force

18) When an object undergoes acceleration

(a) its speed always increases (b) its velocity always increases

(c) it always falls towards the earth (d) a force always acts on it

19) A force acts on an object which is free to move. if we know the magnitude of the force and the mass of the object, Newton's second law of motion enables us to determine the object's

(a) weight (b) speed (c) acceleration (d) position

20) When a force of one newton acts on a mass of 1 kg that is able to move freely, the object moves with a

(a) speed of 1 m/s (b) speed of 1 km/s (c) acceleration of $10m/s^2$ (d) acceleration of $1m/s^2$

21) A and B are two objects with masses 6 kg and 34 respectively

(a) A has more inertia than B (b) B has more inertia than A (c) A and B are of the same inertia

(d) Both A and B possible

22) A cannon after firing recoils due to

(a) conservation of energy (b) backward thrust of gases (c) Newton's third law of motion

(d) Newton's first law of motion

23) If action and reaction were to act on the same body,

(a) the resultant would be zero (b) the body would not move at all

(c) both (a) and (b) are correct (d) neither (a) nor (b) is correct

24) When we kick a stone, we get hurt. Due to which one of the following properties of the stone does it happens?

(a) Inertia (b) Velocity (c) Reaction (d) Momentum

25) A man is standing in a boat in still water. If he tries to walk towards the shore, the boat will

(a) move away from the shore (b) remain stationary (c) sink (d) move towards the shore

ANSWERS

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