Force and Laws of Motion

Multiple Choice Questions

Question 1.
Rocket works on the principle of conservation of:
(a) mass
(b) energy
(c) momentum
(d) velocity

▼ Answer

Answer: (c) momentum

Question 2.
Among the equal-sized stone and a football, the inertia will be higher of:
(a) football
(b) stone
(c) both
(d) none of them

▼ Answer

Answer: (b) stone

Question 3.
A batsman hits a cricket ball which then rolls on the ground. After covering a short distance, the ball comes to rest. The ball slows to a stop because:
(a) the batsman did not hit the ball hard enough.
(b) velocity is proportional to the force exerted on the ball.
(c) there is a force on the ball opposing the motion.
(d) there is no unbalanced force on the ball so the ball would want to come to rest.

▼ Answer

Answer: (c) there is a force on the ball opposing the motion.

Question 4.
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

▼ Answer

Answer: (d) mv

Question 5.
Friction is:
(a) useful to us
(b) harmful to us
(c) both useful as well as harmful to us
(d) none of them.

▼ Answer

Answer: (c) both useful as well as harmful to us

Fill in the Blanks.

Question 6.
The SI unit of momentum is _____.

▼ Answer

Answer: $kgms^{-1}$

Question 7.
The natural tendency of objects to resist a change in their state of rest or of uniform motion is called _____

▼ Answer

Answer: inertia

Question 8.
To every action, there is an _____ and opposite reaction.

▼ Answer

Answer: equal

Question 9.
The resultant force of balanced forces is _____

▼ Answer

Answer: zero

Question 10.
The force can change the motion, direction, or _____ of an object.

▼ Answer

Answer: shape

Question 11.
The value of inertia depends on the _____ of an object.

▼ Answer

Answer: mass

Question 12.
The rate of change of momentum of an object is _____ to the applied unbalanced force in the direction of the force.

▼ Answer

Answer: proportional

True/False.

Question 13.
In 1586, Galileo Galilei wrote his first scientific book 'The Little Balance'.

▼ Answer

Answer: True

Question 14.
In practical situations, it is difficult to achieve a zero balanced force.

▼ Answer

Answer: False

Question 15.
Force is a scalar quantity.

▼ Answer

Answer: False

Question 16.
The mass of an object is a measure of its inertia.

▼ Answer

Answer: True

Question 17.
In an isolated system, the total momentum remains conserved.

▼ Answer

Answer: True

Match the Column.

Question 18.

A	B
1. Unit of force	(i) Mass × acceleration
2. Unit of pressure	(ii) $kgms^{-1}$
3. Test of purity of milk	(iii) Pascal
4. Force	(iv) Lactometer
5. S.I unit of momentum	(v) Newton

▼ Answer

Answer:

A	B
1. Unit of force	(v) Newton
2. Unit of pressure	(iii) Pascal
3. Test of purity of milk	(iv) Lactometer
4. Force	(i) Mass × acceleration
5. SI unit of momentum	(ii) $kgms^{-1}$

Answer in one Word/Sentence.

Question 19.
Write the unit of pressure.

▼ Answer

Answer: Nm^{-1} or pascal

Question 20.
A body is moving with constant velocity, then what will be the acceleration of that body?

▼ Answer

Answer: Zero (0)

Question 21.
Write the S.I unit of force.

▼ Answer

Answer: Newton

Question 22.
On what factor the inertia of an object depends?

▼ Answer

Answer: On mass

Question 23.
Express the second law of motion of newton in the context of the equation of momentum.

▼ Answer

Answer: Force = $\frac{\text{Change in momentum } \Delta P}{\text{time}} = \frac{m(v-u)}{t}$
