Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) A kilogram is a measure of an object's
A) force. B) size. C) mass. D) weight.

2) Compared to a 1-kg block of solid iron, a 2-kg block of solid iron has twice as much
A) inertia.
B) volume.
C) mass.
D) all of these
E) none of these

3) Strange as it may seem, it is just as hard to accelerate a car on a level surface on the moon as it is here on the Earth. This is because
A) the mass of the car is independent of gravity.
B) the weight of the car is independent of gravity.
C) Nonsense! A car is much more easily accelerated on the moon than on the Earth.

4) A ride on a roller-coaster car containing 6 passengers takes 3 minutes. Neglecting friction, a similar ride with 12 passengers aboard would take
A) 1.5 minutes. B) 18 minutes. C) 3 minutes. D) 6 minutes.

5) The newton is a unit of
A) density. B) mass. C) force. D) inertia.

6) A force is a vector quantity because it has both
A) magnitude and direction.
B) action and reaction counterparts.
C) mass and acceleration.

7) A 10-kg brick and a 1-kg book are dropped in a vacuum. The force of gravity on the 10-kg brick is
A) one-tenth as much. B) zero.
C) 10 times as much. D) the same as the force on the 1-kg book.

8) An object is propelled along a straight-line path by a force. If the net force were doubled, the object's acceleration would be
A) the same.
B) four times as much.
C) half as much.
D) twice as much.
E) none of these

9) If an object's mass is decreasing while a constant force is applied to the object, the acceleration

A) decreases. B) remains the same. C) increases.

10) An apple at rest weighs 1 N. The net force on the apple when it is in free fall is

A) 0 N.
B) 0.1 N.
C) 9.8 N.
D) 1 N.
E) none of these

11) When a falling object has reached its terminal velocity, its acceleration is

A) zero. B) g. C) constant.

12) A large and a small person wish to parachute at equal terminal velocities. The larger person will have to

A) jump lightly.
B) jump first from the plane.
C) pull upward on the supporting strands to decrease the downward net force.
D) get a larger parachute.

13) A skydiver, who weighs 500 N, reaches terminal velocity of 90 km/h. The air resistance on the diver is then

A) 500 N.
B) 250 N.
C) 90 N.
D) 410 N.
E) none of these

14) A coconut and a feather fall from a tree through the air to the ground below. The amount of air-resistance force is

A) greater on the coconut.
B) the same on each.
C) greater on the feather.

15) A skydiver jumps from a high-flying plane. As her velocity of fall increases, her acceleration

A) decreases.
B) remains unchanged regardless of air resistance.
C) increases.