Exam

Name_____

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

1) If an apple experiences a constant net force, it will have a constant 1) _____
A) velocity.
B) speed.
C) acceleration.
D) position.
E) more than one of the above

2) A 10–N falling object encounters 4 N of air resistance. The net force on the object is 2) _____
A) 0 N.
B) 4 N.
C) 6 N.
D) 10 N.
E) none of the above

3) A 1–kg mass at the Earth's surface weighs 3) _____
A) 1 N.
B) 5 N.
C) 10 N.
D) 12 N.
E) none of the above

4) A 300–kg bear grasping a vertical tree slides down at constant velocity. The friction force between the tree and the bear is 4) _____
A) 30 N.
B) 300 N.
C) 3000 N.
D) more than 3000 N.

5) Compared to the mass of an apple on Earth, the mass of the apple on the Moon is 5) _____
A) one sixth as much.
B) the same.
C) six times as much.
D) zero.

6) Strange as it may seem, it is just as difficult to accelerate a car on a level surface on the Moon as it is here on Earth because 6) _____
A) the mass of the car is independent of gravity.
B) the weight of the car is independent of gravity.
C) both of these
D) neither of these

7) Compared to a 1–kg block of solid iron, a 2–kg block of solid iron has twice as much 7) _____
A) inertia.
B) mass.
C) volume.
D) all of the above
E) none of the above

8) A heavy ball hangs by a string, with a second string attached to its bottom (Figure 4.8 in your book). A quick pull on the bottom string breaks the 8) _____
A) top string.
B) bottom string.
C) top or bottom string equally.

9) If the mass of a cart is quickly loaded to have twice the mass while a propelling force remains constant, the cart's acceleration 9) _____
A) quadruples.
B) doubles.
C) stays the same.
D) halves.
E) none of these

10) A heavy block at rest is suspended by a vertical rope. When the block accelerates upward by the rope, the rope tension 10) _____
A) is less than its weight.
B) equals its weight.
C) is greater than its weight.

11) A car has a mass of 1000 kg and accelerates at 2 m/s^2. What net force is exerted on the car? 11) _____
A) 500 N
B) 1000 N
C) 1500 N
D) 2000 N
E) none of these

12) The force required to maintain a constant velocity for an astronaut in free space is equal to 12) _____
A) zero.
B) the mass of the astronaut.
C) the weight of the astronaut.
D) the force required to stop the astronaut.
E) none of the above

13) If more horizontal force is applied to a sliding object than is needed to maintain a constant velocity, the object 13) _____
A) accelerates in the direction of the applied force.
B) accelerates opposite the direction of the applied force.
C) experiences greater friction.
D) none of the above

14) Suzie Skydiver, who weighs 500 N, reaches terminal velocity of 90 km/h. The air resistance on Suzie is then 14) _____
A) 90 N.
B) 250 N.
C) 410 N.
D) 500 N.
E) none of the above

1) C
2) C
3) C
4) C
5) B
6) A
7) D
8) B
9) D
10) C
11) D
12) A
13) A
14) D