Ch 4 Review

Multiple Choice

Indicate the answer choice that best completes the statement or answers the question.

1. A soccer ball takes 20 s to roll 10 m. What is the average speed of the soccer ball?
   a. 5 m/s    b. 2 m/s
   c. 200 m/s   d. 0.5 m/s

2. When a car slows down at a traffic light, it is ____.
   a. accelerating   b. traveling at constant velocity
   c. changing direction   d. decreasing its displacement

3. On a speed-time graph, a perfectly straight horizontal line shows the change in speed is ____.
   a. 0   b. 1
   c. 10   d. −10

4. Which describes how velocity changes with time?
   a. inertia   b. acceleration
   c. gravity   d. average speed

5. You hear that a storm is moving 15 km/h north. You have been given the storm's ____.
   a. average speed   b. velocity
   c. constant speed   d. acceleration

6. When you graph the motion of an object, you put ____ on the horizontal axis and ____ on the vertical axis.
   a. speed, time   b. distance, time
   c. time, speed   d. speed, distance

7. To describe velocity you need to know ____.
   a. speed and direction   b. direction and acceleration
   c. speed and acceleration   d. speed and time
8. Which of the following statements best describes the motion of the object?
   a. The object moved at a constant speed.
   b. The average speed of the object was less than 1 m/s.
   c. The instantaneous speed of the object was greater than 1 m/s.
   d. The object accelerated at a constant rate.

9. According to the graph, about how long did the object take to move 40 m?
   a. 2 s   b. 3 s   c. 4 s   d. 5 s

10. The total distance traveled by an object divided by the total amount of time needed to travel equals the _____.
    a. average acceleration   b. average speed
    c. friction   d. net force

11. During which time interval was the object moving fastest?
    a. 0 to 1 s   b. 1 s to 2 s
    c. 2 s to 3 s   d. 3 s to 4 s

12. When an object is at rest, what is its speed?
    a. 1 m/s   b. 3 m/s
    c. 2 m/s   d. 0 m/s
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13. Acceleration involves a change in ____.
   a. time  b. direction
   c. speed  d. both b and c

14. Your mother picks you up at school. It takes 10 minutes for the 5-km drive home. Which of the following can you calculate a value for with the information given?
   a. average speed  b. velocity
   c. instantaneous speed  d. acceleration

15. Which term best describes the velocity of the car?
   a. 0.2 h  b. 50 km/h East
   c. 500 km/h²  d. 10 km East

16. You travel 200 km in 2 h. Your ____ speed is 100 km/h.
   a. initial  b. constant
   c. average  d. instantaneous

17. The distance traveled divided by the time taken to travel the distance is ____.
   a. average speed  b. mass
   c. speed  d. momentum

18. Acceleration is a change in ____.
   a. velocity  b. position
   c. displacement  d. speed

19. What is the term for speed at any instant in time?
   a. constant speed  b. variable speed
   c. instantaneous speed  d. average speed

Your car’s speedometer shows instantaneous speed.

\[ s = \frac{d}{t} \]
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20. Which best explains the graph below?

- a. The speed of the object increases and decreases over a given amount of time.
- b. The speed of the object decreases at a steady rate over time.
- c. The speed of the object increases at a steady rate over time.
- d. The speed is zero and does not change.

The correct answer is c. The speed of the object increases at a steady rate over time.
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Answer Key

1. d
2. a
3. a
4. b
5. b
6. c
7. a
8. a
9. d
10. b
11. b
12. d
13. d
14. a
15. b
16. c
17. c
18. a
19. c
20. c