McRoberts Secondary

Physics 11: Chapter 4 Quiz 2025-09-25

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In this section **no** changes or modifications must be made!

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Type: 012

Exam ID(Physics 11): 25092500001

Please mark the boxes carefully: ☒ Not marked: ☐ or ■

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Only clearly marked and positionally accurate crosses will be processed!

Answers 1 - 12

	a	b	c	d
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11	☐	☐	☐	☐
12	☐	☐	☐	☐
	a	b	c	d

1. True or false? When a ball is thrown straight up, its acceleration at the top is zero.
   a. True
   b. False
2. True or false? It is possible to have zero acceleration and still be moving.
   a. True
   b. False
3. True or false? When a ball is thrown straight up, its velocity at the top is zero.
   a. True
   b. False
4. A ball is thrown straight up, reaches a maximum height, then falls back down to its initial height. Which of the following is true while the ball is going down?
   a. Its velocity and acceleration both point up.
   b. Its velocity and acceleration both point down.
   c. Its velocity points up while its acceleration points down.
   d. Its velocity points down while its acceleration points up.
5. An object is released from rest and falls straight down without air resistance. Which of the following is true concerning its motion?
   a. Its acceleration is constant.
   b. Its velocity is constant.
   c. Neither its acceleration nor its velocity is constant.
   d. Both its acceleration and its velocity are constant.
6. A $5\,\mathrm{kg}$ ball and a $10\,\mathrm{kg}$ ball are both dropped off a cliff at the same time. If air drag can be ignored, then the $10\,\mathrm{kg}$ ball falls
   a. $50\,\%$ faster than the $5\,\mathrm{kg}$ ball.
   b. with double the velocity of the $5\,\mathrm{kg}$ ball.
   c. with double the acceleration of the $5\,\mathrm{kg}$ ball.
   d. with the same acceleration as the $5\,\mathrm{kg}$ ball.
7. Consider a ball that is thrown upwards and which then falls back down. If up is the positive direction, then the ball's velocity
   a. is always positive.
   b. is always negative.
   c. starts positive, then becomes negative.
   d. starts negative, then becomes positive.
8. A ball is thrown straight up, reaches a maximum height, then falls back down to its initial height. Which of the following is true while the ball is going up?
   a. Its velocity and acceleration both point up.
   b. Its velocity and acceleration both point down.
   c. Its velocity points up while its acceleration points down.
   d. Its velocity points down while its acceleration points up.

9. Two balls are launched straight up. The first ball is launched with 9 times the initial speed of the second. Ignore air resistance. How many times higher does the first ball rise compared to the second?

    a. $\sqrt{9}$ times as high

    b. 9 times as high

    c. 9^2 times as high

    d. Impossible to determine without knowing the initial speeds

10. A ball tossed straight up returns to its starting point in $6.21\,\mathrm{s}$. What was its initial speed? Ignore air resistance.

    a. $30.4\,\mathrm{m/s}$

    b. $26\,\mathrm{m/s}$

    c. $34.5\,\mathrm{m/s}$

    d. $39.6\,\mathrm{m/s}$

11. A fighter plane is launched from a catapult on an aircraft carrier. Starting from rest, it reaches a speed of $228\,\mathrm{km/h}$ in $2.21\,\mathrm{s}$. Assuming constant acceleration, what is the length of the aircraft catapult?

    a. $70\,\mathrm{m}$

    b. $44.8\,\mathrm{m}$

    c. $140\,\mathrm{m}$

    d. $252\,\mathrm{m}$

12. An F1 car accelerates from 0 to 60 miles per hour in $2.25\,\mathrm{s}$. What is the acceleration of the car in SI units? ($1\,\mathrm{mile} = 1609.34\,\mathrm{m}$)

    a. $6.36\,\mathrm{m/s^2}$

    b. $11.9\,\mathrm{m/s^2}$

    c. $10.8\,\mathrm{m/s^2}$

    d. $26.7\,\mathrm{m/s^2}$