Name: _____ Kin11 Quiz #5

Form: 0

Version: 0

1. A sprinter, starting from rest, can accelerate at 3.0 m/s^2 for 3.0 s. How far will she run in this 3.0 seconds?
   a) 1.0 m
   b) 4.5 m
   c) 6.0 m
   d) 9.0 m
   e) 13.5 m

2. A hockey player gliding along the ice at a velocity of 1 m/s accelerates at 2 m/s^2 for 3 s. His final velocity is:
   a) 7 m/s b) 6 m/s c) 5 m/s d) 3 m/s e) 2 m/s

3. How far would a car travel in 6.0 s if its initial speed was 2.0 m/s and if it accelerated at 2.0 m/s^2?
   a) 12 m
   b) 14 m
   c) 24 m
   d) 36 m
   e) 48 m

4. A car initially at rest travels a distance of 20.0 m in 4.0 s with uniform acceleration. The magnitude of the acceleration of the car (in m/s^2) is:
   a) 0.4
   b) 1.3
   c) 2.5
   d) 5.0
   e) 10

5. In 6.0 s the velocity of a subway train changes from 48 m/s to 12 m/s. The acceleration is:
   a) 6.0 m/s
   b) -6.0 m/s
   c) 6.0 m/s^2
   d) -6.0 m/s^2
   e) -36 m/s

6. A rock is dropped from the top of a building 15 m high. How long does it take to fall if the effects of friction are negligible?
   a) 1.2 s b) 1.5 s c) 1.7 s d) 3.1 s

7. An elevator travelling at an initial unknown velocity, accelerates uniformly at a rate of 0.50 m/s^2 for a time of 4.0 seconds. During the acceleration period the displacement of the elevator was + 8.0 meters. What was the initial velocity of the elevator?
   a) 10 m/s b) 4.0 m/s c) 2.0 m/s d) 1.75 m/s e) 1.0 m/s

8. A car speeds up from 50 m/s to 100 m/s in 3.0 s. How far did the car travel during this acceleration?
   a) 75 m
   b) 150 m
   c) 225 m
   d) 300 m
   e) 450 m

9. A speeding motorist travelling at 28 m/s passes a parked police officer. The officer begins to chase the motorist the moment the motorist passes. The officer accelerates at a constant 1.8 m/s^2 and the motorist travels at a constant speed of 28 m/s, how much time will it take the officer to catch up?
   a) 5.6 s
   b) 16 s
   c) 31 s
   d) 64 s

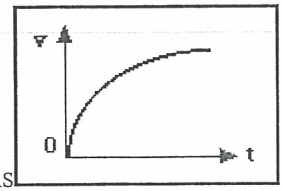
10. How long would it take a truck to increase its speed from 10 m/s to 30 m/s if it does so with uniform acceleration over a distance of 80 m ?
    a) 2.0 s
    b) 4.0 s
    c) 5.0 s
    d) 8.0 s
    e) not given enough information

11. Given below are the data from an experiment where a cart was allowed to roll down a uniform slope. What was the cart's displacment between 3.0 s and 4.0 s ?

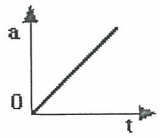
time (s)	0	1.0	2.0	3.0	4.0	5.0
velocity (cm/s)	0	4.0	8.0	12.0	16.0	20.0

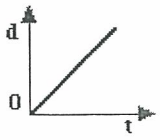
    a) 0.070 m
    b) 0.14 m
    c) 0.28 m
    d) 0.32 m

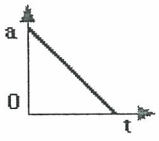
12. A stone takes 6.00 s to hit the beach after falling from the top of a cliff. Ignoring air friction, the height of the cliff is
    a) 29.4 m.
    b) 58.9 m.
    c) 177 m.
    d) 353 m.

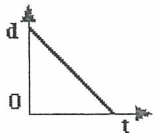


13. Which one of the following graphs can be derived from the velocity-time graph shown in the diagram to the right?

a) 

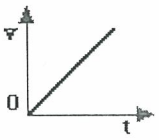
b) 

c) 

d) 

14. Acceleration is best defined as
    a) rate of change of displacement with time
    b) speed divided by time
    c) change in velocity
    d) rate of change of velocity with time
    e) a speeding up

15. Displacement can be obtained from
    a) the slope of an acceleration-time graph
    b) the slope of a velocity-time graph
    c) the area under an acceleration-time graph
    d) the area under a velocity-time graph
    e) the slope of a displacement-time graph

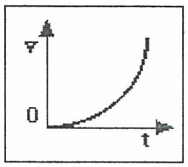


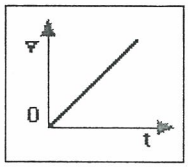
16. Which one of the following statements correctly describes the motion of an object depicted by the graph ?

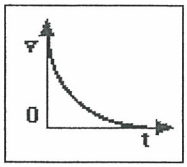
    a) the object is in uniform motion
    b) the object is accelerating uniformly
    c) the object's velocity is decreasing
    d) the object is moving at constant velocity
    e) the object is at rest

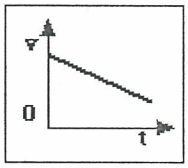
17. Which one of the following terms can be defined as "the slope of a line tangent to a **velocity-time** graph" ?
    a) instantaneous velocity
    b) velocity
    c) average acceleration
    d) instantaneous acceleration

18. Which one of the following graphs represents an object moving with a constant , positive acceleration ?

a) 

b) 

c) 

d) 

19. Which of the following examples does **NOT** illustrate uniform motion ?
    a) a ball rolls along a table without changing velocity
    b) a mass is thrown vertically upward at 10 m/s
    c) a jogger runs 50 m along a straight track at constant speed
    d) an elevator moves vertically upward past four floors at zero acceleration
    e) an elevator sits at rest between two floors

20. Which of the following terms best describes the acceleration of a baseball thrown upwards and outwards?
    a) constant upwards
    b) constant downwards
    c) increases and decreases
    d) decreases then increases

21. An athlete completes two laps of a circular track of radius 50.0 m. The total distance the athlete runs is:
    a) 0 m
    b) 50.0 m
    c) 100 m
    d) 314 m
    e) 628 m

22. A child on a toboggan slides down a snowy hill, accelerating uniformly at a rate of $2.8\ m/s^2$. When the toboggan passes the first observer it is travelling 1.4 m/s. How fast will it be moving when it passes a second observer who is 2.50 m down hill from the first observer?

(3.00 marks)

23. On a certain asteroid, a steel ball drops from rest, a distance of 0.80 m in 2.00 seconds. Assuming uniform acceleration due to gravity on this asteroid, what is the acceleration due to gravity on the asteroid?

(3.00 marks)

24. During a field trip to the amusement park, the school bus travelled the 30 km distance to Playland while maintaining an average velocity of 90 km/hr.

Calculate the average speed the driver should maintain on the return trip, if he wanted to have an average speed of 70 km/hr for the entire trip (both there and back). (5 marks)

You have completed the test!