1- In SI units a unit of force is N which defined as ....

A. kg^2.m/s

B. kg.m/s^2

C. kg.m^2/s

D. kg.m/s

2- Which one of the following is not a vector quantity :

A. displacement

B. velocity

C. mass

D. acceleration

3- A car , initially at rest , travels 20 min 4 s along a straight line with constant acceleration . The acceleration of the car is :

A. 98 m/s^2

B. 2.5 m/s^2

C. 0.4 m/s^2

D. 4.9 m/s^2

4- If vector g = (-10.0x + 1.0y). The direction of vector is :

A. 571

B. -84.3

C. 84.3

D. -5.71

5- The vector "- A" is:

A. greater than A in magnitude

B. in the direction opposite to A

C. in the same direction as A

D. a less than A in magnitude

6- of the following situations , which one is correct when the object speeding up ?

A. A body having velocity east (+ x - axis) and acceleration east (+ x - axis)

B. A body having velocity east (tx - axis) and acceleration west (x - axis)

C. A body having velocity west (-x - axis) and acceleration east (+ x axis)

D. A body having non zero velocity and zero acceleration

7- Which one of the following statement is true?

A. Vector is quantity described by magnitude only.

B. Scalar quantity described by magnitude only.

C. Vector quantity described by direction only.

D. Scalar quantity described by both a magnitude and a direction.

8- The inertia of a body tends to cause the body to... :

A. fail toward Earth

B. slow down

C. speed up

D. resist any change in its motion

9- Let A = (2m)x + (6 m)y and = (4m)x + (2 m)y The vector sum § = A + B is:

A. (6m)x + (8 m)y

B. (6mt)x + (6 m)y

C. (2m)x + (8 m)y

D. (8m)x + (6 m)y

10- A car move to west. At the end of 3 seconds its speed is 20 cm/s towards -X axis at the end of 8 seconds its speed is 0. What is the average acceleration from the third to the eighth second ?

A. -4.0 cm/s

B. -5.0 cm/s

C. 4.0 cm/s

D. 6.0 cm/s

11- A ball rolls up a slope. At the end of 3 seconds its speed is 20 cm/s towards -x axis; at the end of 8 seconds its speed is 0. What is the average acceleration from the third to the eighth second?

A. -5.0 cm/s^2

B. 2.5 cm/s^2

C. 4 cm/s^2

D. -4 cm/s^2

12- The weight defined as

A. m/g

B. ma

C. mg

D. m/a

13- Which one of the following is not a scalar quantity ?

A. Time

B. Velocity

C. Mass

D. Temperature

14- The “reaction” force does not cancel the “action” force because :

A. The action force is greater than the reaction force

B. They are on different bodies

C. They are in the same direction

D. The reaction force exists only after the reaction force is removed

15- Of the following situations, which one is correct when the object is slowing down?

A. A body having velocity west (-x-axis) and acceleration west (-x-axis)

B. A body having non-zero velocity and zero acceleration

C. A body having velocity east (+x-axis) and acceleration east (+x-axis)

D. A body having velocity east (+x-axis) and acceleration west (-x-axis)

16- The velocity of an object moves with constant acceleration is given as a function of time by " v = 4t - 3t^3 ", where v is in m/s and t is in seconds. Its average acceleration over the interval from t = 0 to t = 2s :

A. -4 m/s^2

B. -8 m/s^2

C. -16 m/s^2

D. 4 m/s^2

17- If vector A = (3.0x + 4.0y), the magnitude |A| is

A. 1

B. 5

C. 7

D. 25

18- Two vectors are equal if they have the...

A. Same magnitude

B. Same direction

C. Same direction and same magnitude

D. Same direction and different magnitude

19- According to Newton's second law, acceleration is always in the direction

A. Of the initial velocity

B. Of the final velocity

C. Of the displacement

D. Of the net force

20- Let A = (2m)x + (-6m)y and B = (4m)x + (2m)y . The vector sum S = A + B is :

A. S = (6m)x + (8m)y

B. S = (6m)x + (4m)y

C. S = (2m)x + (-8m)y

D. S = (6m)x + (-4m)y

1- B

2- C

3- B

4- D

5- B

6- A

7- B

8- D

9- A

10- C

11- C

12- C

13- B

14- B

15- D

16- B

17- B

18- C

19- D

20- D