بنك اسئلة خاصة بمادة فيزياء 110

Private bank questions textured Physics 110

1. We can write the speed of light (c = 299,000,000 m/s) using the scientific notation as:

(d) 299×10^{8} (c) 0.299×10^{8} (b) 29.9×10^{8} (a) 2.99×10^{8}

2. A car moving with a speed of 100 km/h, what is its speed in m/s?

(d) 167.7 m/s (c) 277.8 m/s (b) 16.7 m/s (a) 27.8 m/s

3. We can express the very small number (0.000 000 004 56) using the scientific notation as:

(d) 4.56×10^{-11} (c) 4.56×10^{-10} (b) 4.56×10^{-9} (a) 4.56×10^{-8}

4. Which of the following is not a base quantity ?

(d) time (c) length (b) mass (a) speed

5. How many centimeters in 1 km?

(d) 10^{4} cm (c) 10 cm (b) 10^{2} cm (a) 10^{5} cm

6. (1 m = 3.281 ft) then 1.5 ft/h equals:

(b) 1.27×10^{-4} m/s (c) 1645.8 m/s (d) 17717.4 m/s (a) 1.37×10^{-3} m/s

7. A square with an edge of 1 cm has an area of: (area = edge^2)

(d) 10^{-6} m^2 (c) 10^{-4} m^2 (b) 10^{4} m^2 (a) 10^{2} m^2

8. 10^{3} gigawatts is: .

(d) 10^{-3} watts (c) 10^{-6} watts (b) 10^{9} watts (a) 10^{12} watts

9. Which prefix is true?

(d) pico = 10^{9} (c) mega = 10^{6} (b) micro = 10^{-9} (a) milli = 10^{3}

10. 1 mm^2 =

(d) 10^{-12} m^2 (c) 10^{-9} m^2 (b) 10^{-6} m^2 (a) 10^{-3} m^2

12. If 1 mi = 1609 m then 55 mi/h is

(d) 88.1 m/s (c) 66.3 m/s (b) 24.6 m/s (a) 15.4 m/s

13.A nanosecond is: .

(d) 10^{-10} s (c) 10^{10} s (b)10^{-9} s (a) 10^{9} s

14.A gram is: .

(d) 10^{3} kg (c) 10^{6} kg (b)10^{-3} kg (a) 10^{-6} kg

15.The SI base unit for mass is:

(d) kilopound (c)kilogram (b) pound (a) gram

16.There are 1000 meters in

(d) 10,000 cm (c) 100 cm (b) 10 kilometer (a)1kilometer

17.How many centimeters in 1 km?

(d) 10^{4} cm (c) 10 cm (b) 10^{2} cm (a)10^{5} cm

18.Are the following statements (True) or (False) ?

19.The SI base unit for mass is gram.

(b)False (a) True

20.There are 1209600 seconds in one week. .

(b)False (a) True

21. Suppose the motion of a particle is described by the equation: $X = 20 + 4\,t^{2}$. Find the instantaneous velocity at t =5 s

(d) 36 m/s (c)40m/s (b) 60 m/s (a) 16 m/s

22.A ball thrown vertically upward with an initial velocity of 12 m/s, what is the ball's maximum height?

(d) 1.22 m (c) 0.61 m (b) 14.7 m (a)7.35m

23. A body moves along the x-axis with constant acceleration $a = 4\ m/s^{2}$. At t=0 the body is at x_0=5 m and has velocity v_0 = 3 m/s. Find its

(d) 18 m (c) 15 m (b)19m position at t = 2 s ? (a) 14 m

24. Suppose the velocity of the particle is given by the: $v = 10 + 2\,t^{2}$ where v is in m/s and t is in s . Find the change in velocity of the particle in the time interval between $t_1 = 2$ s and $t_2 = 5$ s ?

(d)42m/s (c) 24 m/s (b) 14 m/s (a) 41 m/s

25. In question 24, Find the instantaneous acceleration when t = 2 s ?

(d) 18 m/s^2 (c)8 m/s^2 (b) 14 m/s^2 (a) 4 m/s^2

26. You walk a distance 1.22 m in 1 s and then run a distance 3.05 m in 1 s, what is your average speed?

(d) 1.83 m/s (c)2.14m/s (b) 4.27 m/s (a) 0.92 m/s

27. The following are equations of the velocity v(t) of a particle, in which situation the acceleration is constant?

(a) $v = 5\ t^3 - 3$ (b) $v = 3\ t^2 - 4\ t$ (c) $v = 4\ t^2$ (d) v=3t+6

.28.A rock is dropped from rest from the top of a 100 m tall building, how long does it take to fall the first 50 m ?

(d) 4.5 s (c) 20.4 s (b) 10.2 s (a)3.2s

29.The following are equations of the position of a particle, in which situation the velocity of the particle is constant ?

(d) $x = 4\ t^{-2}$ (c)x=-3t–2 (b) $x = -2\ t^3$ (a) $x = 4\ t^2 - 2$

30.A ball thrown vertically upward with an initial velocity of 12 m/s, what is the ball's maximum height?

(d) 1.22 m (c) 0.61 m (b) 14.7 m (a)7.35m

31.What is the initial speed of a car moving a distance of 60 m in 6 s if the final speed was 15 m/s?

(d) 17.5 m/s (c)5m/s (b) -5 m/s (a) -10 m/s

32.If the total distance moved by a bus before stopping was 56.7 m with initial speed of 22.36 m/s. What is the magnitude of the acceleration?

(d) 2.21 m/s^2 (c) 17.63 m/s^2 (b) 4.41 m/s^2 (a) 8.82 m/s^2

33.A pipe dropped from a building struck the ground with a speed of 24 m/s. what height was it dropped from?

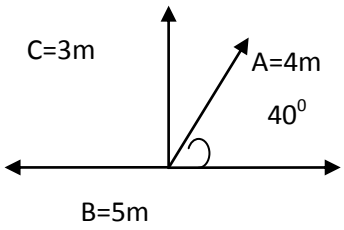
(d)29.4m (c) 1.22 m (b) 2.44 m (a) 58.8 m

34.What is the initial speed of a ball thrown upward vertically reaching a height of 0.544 m in 0.2 s ?

(d) 0.74 m/s (c) 2.1 m/s **(b)3.7m/s** (a) 4.68 m/s

35.In figure the vactor **A in unit vactor notation** is:

a) 3.1i+6.2j **b) 4i+1j** **c) 2i** **d)5j**



1.In figure the **magnitude** of vector B is:

a) 4m **b) 5cm** **c) 2m** **d)5m**

2.In figure the vactor **C in unit vactor notation** is:

a) 4i **b) 5k** **c) 3j** **d)k**

37.Given A=3i+5j-10k, then the **amagnitude** of vector A is:
a)12 **b)10** **c)11.5** **d)13.4**

38.Given c=5i+7j, then the **magnitude** of vector c is:
a)5 **b)9** **c)8.6** **d)8**

39.A vactor has amagnitude of 9 units makes an angal of 30^0 with the x-axis **is y-component**

a) 4.5 units **b) 5** units **c) 8** units **d)2** units

40.the scalar product **i.j** is equal to:

a) k **b) zero** **c) 2i** **d) j**

41.Two vactor are given as A=4i+2j+k and B=2i+5j+3k. The resut of **A-B**:

a) 2i-3j-2k **b) 5i-3j** **c) 2i+4j** **d)i-5j**

42.if the amagnitude of avctor 12m and its x-component of 15m . the **angal** it makes with the positive x-axis is:

a)36.8^0 **b) 30.2^0** **c) 26.8^0** **d) 16.8^0**

43.Two vactor are given as A=i+2j and B=3i+6j. Thir scalar **A.B** is:

a) 4 units **b)15** units **c) 12** units **d)9** units

44.the vactor product $\hat{j} \times \hat{i}$ is equal to:

a) - k **b) j** **c) i** **d) j.k**

45.Two vactor A=4i+5j+2k and B=i-3j+2k Thir vactor product

$A \times B$ is:

a) 2i+3j **b) 16i-6j+7k** **c) i-4k** **d)3j +7k**

46.if the angle between A and B Is 90^0 and A=7units,B=3units then the magnitude of the vector product $A \times B$ is:

a) 4 **b) 8** **c) 21** **d) 12**

47. Give vector A = 2î + 2ĵ - 2k̂ and B = 4î + 4ĵ + 4k̂ . The value of Vector C which makes the equation **A - B + C = 0**

a) 12i-5j **b) 2i+2j+6k** **c) 3i+4j** **d) 2j-5k**

48.Two vectors are given A = -3î + 2ĵ + 5k̂ and

B = 4î + 5ĵ - 2k̂ . The results of **2Ā - B̄** is:

a) 9i-3j+3k **b) i+4j+3k** **c) 5i+7j** **d) -10j-j+12k**

49.Vector Ā has x-component of 2.0 and y-component of 21.0. The **magnitude of this vector is**

a) 22.7 **b) 22.09** **c) 19.15** **d) 17.4**

50.if A=i+5j+6k and B=-i+4j-8k the sum $\hat{A} + \hat{B}$:

a) 5i+2j+4K **b) 9j-2k** **c) 2i-4k** **d)6j+J+7k**

51.The SI unit of kinetic energy is: $kg.m/s^2$

a) False b) True

52.The velocity is defined as the change in position from initial position to final position.

a) False b) True

53. Watt is equal to: Joule per second

a) False b) True

54-The magnitude of the gravitational force is equal to the product (ma).

a) False b) True

55-The horizontal range R is maximum for a launch angle of 90

a) False b) True

56-The SI base unit for mass is gram.

a) False b) True

57-A 5kg object moving at a speed of 6 m/s, its kinetic energy is 80 Joule.

a) False b) True

58.amicrosecond is:

a) 10^6 s b) 10^{-6} s c) 10^9 s d) 10^{-9}s

59. A gram is:

a) 10^{-6} kg b) 10^{-3} kg c) 1 kg d) 103

60.The SI base unit for mass is:

(a) kilopound (b)kilogram (c) pound (d) gram

61.Object moves with a constant velocity of 9.8 m/s, its acceleration in m/s^2 is:

(a) 9.8 m/s^2 (b)zero (c) 0.98 m/s^2 (d) 98 m/s^2

62.A rope from the ceiling suspends a ball of weight 419 N. The tension in the rope is:

a. 419 N b) 209N c) 412N d)654N

63. A particle of mass 134 kg at a point where

g = 9.8 m/s^2, its weight at a point where g = 0 is:

a) 134 N b) zero N c) 13132N d) 654N

64.The standard 1-kg mass is attached to a compressed spring and the spring is released. If the mass initially has an acceleration of 12.7 m/s^2, the force of the spring has a magnitude of:

a) 12.7 N b) 7.9 N c) 11.7N d) 9.8N

65. When a force of 56 N is applied to a body, its acceleration is 6 m/s^2. The mass of the body is:

a) 9.3 kg b) 7.3 kg c) 1.7kg d) 2.8kg

66.A 13 kg box is moving with a constant speed of 30 m/s . The net force on the box is:

a) 1.7N b) zeroN c) 390N d) 11N

2. ==========

67. A 22 kg mass is sliding horizontally on a frictionless surface,the normal force FN is :

a) 215.6N b) 204N c) 334N d) 121N

3. ==========

68. A man of mass 58 kg stand on elevator, if the elevator is going upward with acceleration of 2 m/s^2, the normal force on the man from the elevator is:

a) 215.6N b) 68.44N c) 32N d) 421N

69.A force of 50N is:

a-50 kg. m/s^2 b) 100 kg.m/s^2 c) 54 kg. m/s^2 d) 5.8 kg.m/s^2

70.thre forc an partical of mass $F_1 = 30i + 10j$ $F_2 = 3i + 50j$ if the partical constant speed 4m/s^2 if F_3:

a) $F_3 = -33i - 60j$ b) $F_3 = -33i + 60j$

c) $F_3 = 33i - 60j$ d) $F_3 = 33i + 60j$

71.the direction of accelertion of the body is.

a) the same direction of net force

b) opposite to the net force.

c) the same of the initial velocity.

d) perpendicular to the direction of the net force

72-If the position of an object changes from $r_1 = -2\hat{i} + 3\hat{j}$ to $r_2 = \hat{i} - 2\hat{j}$, the displacement is:

A) $\Delta r = 3\hat{i} + 5j$ B) $\Delta r = -3\hat{i} - 5\hat{j}$ C) $\Delta r = -3\hat{i} - 5j$ D) $\Delta r = 3\hat{i} - 5\hat{j}$

73.A man throws a stone horizontally off a cliff that is 40 m above the sea level. If the velocity of the stone is 30 m/s, the time it takes to hit the sea level is:

D) 6 s C) 2.85 s B) 4 s A) 3.49 s

74.An object is in equilibrium, the acceleration of the object is:

D) Constant C) Zero B) -9.8 m/s^2 A) 9.8 m/s^2

75.A projectile is launched at an angle of 30^0 to the horizontal with a speed of 100 *m/s*. The maximum height of the projectile is :

D) 44.0 m C) 250 m B) 127.55 m A) 100m

76.In the projectile motion, the angle for the maximum range is:

(c) 180^0 (d) 45^0 (b) 75^0 (a)90^0

77-A ball is thrown with a velocity of 15 m/s at an angle of 30^0. The y-component of the velocity is :

(d) (c)15 m/s (b) 7.5 m/s (a)30 m/s

13m/s

78- In question (77), the x-component of the velocity is:

(b) 7.5 m/s (c)15 m/s (d) 13m/s (a)30 m/s

79- In question (77), the maximum height is :

(d) 28.7 m (b)287m (c)2.87 m (a)2870m

80- In question (77), the range is:

(b)198.8 m (c) 1988 m (a) 19.88 m

(d) 1.988 m

81- In question (77), the time of flight is:

(d) 1.5 s (c) 15 s (b)0.15 s (a)0.015 s

82.Coefficient of kinetic friction

a. $\mu_s = \frac{f_s}{F_g}$ b) $\mu_k = \frac{f_k}{F_N}$ *c)* $\mu_s = \frac{f_s}{F_N}$ *d)* $\mu_k = \frac{f_k}{F_g}$

83. The ratio of the change of displacement to the time interval: .b

a) average velocity b) speed c) acceleration d) position

84. In projectile motion , the Y- component of the velocity at maximum height is:

a) Constant b) The maximum Value c) Zero d) negative

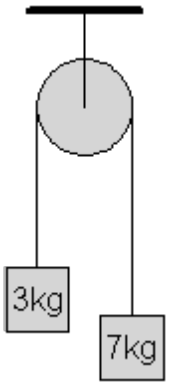
85.The direction of the acceleration of body is

a) opposite to the net force.

b) the same direction of the net force.

c) perpendicular to the direction of the net force.

d) the same of the initial velocity .c



86.What is the acceleration of the 3-kg block?

a) 2.9 m/s^2 b) 3.9 m/s^2 c) 6.9 m/s^2 d) 9.8 m/s^2

87.The final velocity of an apple if it falls from a 100 m-tree is

a. 44.3 m/s b. 10 m/s c. 12m/s d. 54 m/s

88. The direction of vector $\bar{A} = (-25m)\hat{i} + (55m)\hat{j}$ is :

a) - 113^0 b) 29^0 c) 151 ^{0} d) - 65.6^0

89. The position of a body moving along the x axis is given by

$x = 5t - 2t^2 + t^3$,then The position at t = 2 s is:

a) 36 m b) 18 m c) 8 m d) 10 m

90.Convert 5.86 x 10^6 cm to km

a) 58.6 km b) 5.86 km c) 5860 km d) 0.586 km

91. An object is thrown straight up from ground level and reached its highest point after 3.4 s . Its initial velocity is:

a) 33.32 m/s b) 35.3 m/s c) 43.31 m/s d) 30.32 m/s

92. A spring moves from position 5 m to zero , how much work is done by the spring if the spring constant is 100 N/ M

a) 250 J b) 1250 J c) 500 d) 0.05 J

93. A 2 Kg mass moving with initial velocity of 5 m /s , its velocity increased to 8 m/s , find the change in its Kinetic energy

a) 78 J b) 39 J c) 19.5 J d) 6 J

94. A nano meter =

a) 10^{9} m b) 10^{-6} m c) 10^{-3} m d) 10^{-9} m

95.A projectile is fired at an angle of 30 above the horizontal with an initial speed of v_0 , If the maximum range it reaches is 140 m, what its initial speed?

a) 20 m/s b) 40 m/s c) 60 m/s d) 80 m/s

96. Coefficient of kinetic friction

d. $\mu_s = \frac{f_s}{F_g}$ b) $\mu_k = \frac{f_k}{F_N}$ *c)* $\mu_s = \frac{f_s}{F_N}$ *d)* $\mu_k = \frac{f_k}{F_g}$

97. A baseball is thrown vertically into the air. the acceleration of the ball at its highest point is:

a) zero b) -g c) g d) none

98.The horizontal range R maximum is reached when θ is :

a) 180° b) 90° c) 45° d) 0°

99. A bicycle complete 4 revolutions around a circular path of radius 10 m in 120 ses. The centripetal acceleration is

a) 0.44 m/s^2 b) 0.33 m/s^2 c) 0.65 m/s^2 d) 3.5 m/s^2

100. The ratio of the change of displacement to the time interval:

a) average velocity b) speed c) acceleration d) position

101.In projectile motion , the Y- component of the velocity at maximum height is:

a) Constant b) The maximum Value c) Zero d) negative

102.The direction of the acceleration of body is

a) opposite to the net force.

b) the same direction of the net force.

c) perpendicular to the direction of the net force.

d) the same of the initial velocity

103.At the maximum height, what of the followings is correct?
a)Its velocity is zero
b)Its y-component velocity is zero
c)Its x-component velocity is zero
d)Its acceleration is zero

104.To have the maximum range, a projectile must be launched at an angle of
a)25
b)35
c)45
d)60

105.Ignoring air resistance, the acceleration of any projectile along the x-direction is(SI units)
a)9.8
b)0
c)varied from one to another
d)less than zero

106.Ignoring air resistance, the acceleration of any projectile along the y-direction is (SI units)

a)9.8
b)0
c)varied from one to another
d)less than zero

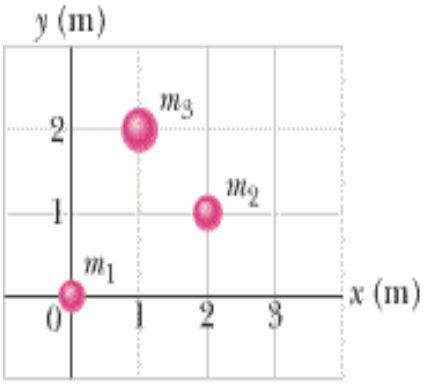
107-Three particles of masses m_1=1 kg, m_2=2 kg, and m_3=3 kg are located in *xy* plane as (3,2), (-1,1), and (3,-2), respectively. Find the coordinate of the center of mass?

a-(1.67,0.34) b-(.67,0.3) c- (1,0.4) d-(-1.67,0.34)

108-A motorcycle of mass 120 kg moves with a fixed speed of 15 m/s. Calculate the magnitude of its linear momentum?

a-1700 $kg.m/s$ b-1600 $kg.m/s$ c- 1800 $kg.m/s$ d-180 $kg.m/s$

109-Three particles of masses m_1=2 kg, m_2=3 kg, and m_3=5 kg are arranged in the *xy* plane, as shown in the figure below. Find the position vector of the center of mass.?



a-r_{cm} =1.1 i +1.3 j b- r_{cm} =-1.1 i +1.2 j
c- r_{cm} =1.4 i +1.3 j d- r_{cm} =1.1 i -1.3 j

110- car is moving with a constant speed of 27 m/s. If its momentum is 21600 kg.m/s, what is its mass?

a-80kg b-1200kg c- 500kg d-800kg

111- A spring moves from position 5 m to zero , how much work is done by the spring if the spring constant is 100 N/ M

a) 250 J b) 1250 J c) 500 d) 0.05 J

112- A 2 Kg mass moving with initial velocity of 5 m /s , its velocity increased to 8 m/s , find the change in its Kinetic energy

a) 78 J b) 39 J c) 19.5 J d) 6 J

113-CHOOSE THE CORRECT ANSWER

1. When the object is stationary, its kinetic energy is zero.

a) True b) False

2-woork of 1 J = 1 kg. m/s^2

a) True b) False

3-The law of conservation of liner momentum is (P_i=P_f)

a) True b) False

4-The instantaneous Power $P = \frac{W}{\Delta T}$

a) True b) False

5-Watt is equal to: Joule per second:

a) True b) False

114-Kilowatt-hour is the unit of

a) momentum b) work c) Power d) spring constant

115-What is the speed of a 55 kg woman running with a kinetic energy of 412.7 J?

a) 15 m/s b) 3.87 m/s c) 2.7 m/s d) 4 m/s

116-A force was applied on an object of mass 50 kg with speed 32 m/s, the linear momentumis:

a) 1600 kg.m/s b)1900 kg.m/s c) 1500 kg.m/s d)1700 kg.m/s

أستاذة المادة

سميرة القحطاني