PHY101-PHYSICS

MID TERM MCQS

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1.The ultimate strength of a sample is the stress at which the sample:

A. Return to its original shape when the stress is removed
B. Remains underwater
C. Breaks
D. Bends 180?

2.The value of k in coulombs law depends upon

A. Medium between two charges
B. Distance between charges
C. Magnitudes od charges
D. All of these

3. The law of inertia was firstly formulated by:

A. Aristotle
B. Galileo
C. Newton
D. Einstein

4.The ratio of circumference of a circle to its diameter is equal to;

A. 2 n
B. n
C. n/2
D. one steadier

5.A water bed that is 1.5 m wide and 2.5m long weighs 1055 N. Assuming the entire lower surface of the bed is in contact with the floor, what is the pressure the bed exerts on the floor?

i. 250 Pa
ii. 260 Pa
iii. 270 Pa
iv. 280 Pa

6.The center of gravity is the average location of the _____of and object.

A. Mass
B. Weight
C. Static equilibrium
D. Dynamic

7. Acceleration in a body is always produced in the direction of:

A. Velocity
B. Weight
C. Force
D. Acceleration

8. As per Coulomb's law, the force of attraction or repulsion between two points charges directly proportional to the.

A. Cube of the distance
B. Product of the magnitude of charges
C. Sum of the magnitude of charges
D. Square of the distance between them

9.One revolution is the same as:

A. 2n rad
B. n rad
C. 57 rad
D. 1 rad

10. A _____ vector is obtained by dividing the vector by its magnitude:

A. Unit
B. Position
C. Normal
D. Negative

11. are the speed of sound to be 340 m/s. A thunder clap is heard about 3 s after the lightning is seen. The source of both light and sound is:

A. moving overhead faster than the speed of sound
B. emitting a much higher frequency than is heard
C. emitting a much lower frequency than is heard
D. about 1000 m away E. much more than 1000 m away

12. If the distance between all pairs of particles of the body do not change by applying a force then the body is said to be.

A. Rigid
B. Large
C. Small
D. Flexible

13. For an ideal fluid following through a horizontal pipe, Bernoulli's equation states that the sum of the pressure and energy per unit volume along the pipe des which of the following? (Assume measurement are taken along the pipe in the direction of fluid flow.)

A. Increases as the pipe diameter increases
B. Decreases as the pipe diameter increases
C. Remains constant as the pipe diameter increases
D. Increases, then decreases as the pipe diameter increases

14. Which of the following statement is true?

A. Weight is a force, mass is a measure of inertia
B. Mass depends on gravity, weight does not
C. Gravity is necessary to measure both weight and mass
D. Heaver objects weight more than light objects

15. A/an _____ is the basic reason to change in the motion of an object according to Newton's second law of motion

A. Net force
B. Decrease in inertia
C. Change in velocity

D. Acceleration

16. When a spring is compressed or stretched, The potential energy of the spring

A. Decreases
B. Stays constant
C. Increases
D. Becomes zero

17. The dimensional units of ratio of work and power is:

A. J
B. T
C. L
D. F

18. A particles oscillating in simple harmonic motion is:

A. In equilibrium at the end of its path because its velocity is zero there
B. In equilibrium at the center of its path because its acceleration is zero there
C. Never in equilibrium because it is in motion
D. Never in equilibrium because there is always a force

19. A Fire whistles emits a tone of 170 Hz Take the speed of sound in air to be 340m/s. The wavelength of this sound is about

A. 3.0m
B. 0.5m
C. 1.0m
D. 2.0m

20. How much pressure is exerted on a structure on a submarine at a depth of 8.50km in the Pacific Ocean? (The density of sea water=1.025 *103 kg/m3, and the atmospheric pressure at level=1.01*105 Pa).

A. 8.6*105 Pa
B. 8.7*106 Pa
C. 9.5*106 Pa

D. 8.6*106 Pa

21. A force of 100N acts upon a body for five seconds. What will be the change in momentum?

A. 200Ns
B. 500Ns
C. 20 Ns
D. 50 Ns

22. One newton is a force that produces an acceleration of 0.5 m/s 2 in a body of mass:

A. 1 kg
B. 2 kg
C. 4kg
D. 8 kg

23. When breaks are applied to a fast moving car, the passenger will be throws:

A. Forward
B. Backward
C. Downward
D. Upward

24. In the formula F=Gm 1m2/r2, the quantity G:

A. Depends on the local value of g
B. Is used only when Earth is one of the two masses
C. Is greatest at the surface of Earth
D. Is a universal constant of nature

25. Per-second refers to the dimensions of physical quantity:

A. Angular displacement
B. Angular velocity
C. Angular acceleration
D. Angular momentum

26. Light years is a unit of:

A. Acceleration
B. Velocity
C. Time
D. Distance

27. Young's modules can be used to calculate the strain for a stress that is:

A. Just below the ultimate strength
B. Just above the ultimate strength
C. Well below the yield strength
D. Well above the yield strength

28.A wheel of radius 50 cm having the angular speed of 5 rad/s will have linear speed in m/s?

A. 0.5
B. 1.5
C. 2.5
D. 3.5

29. Objects moves in a circle at constant speed. The work done by the centripetal force is zero because:

A. The displacement for each revolution is zero
B. The average force for each revolution is zero
C. There is no friction
D. The centripetal force is perpendicular to the velocity

30. A ball is thrown upward into the air with a speed that is greater than terminal speed. It lands at the place where it was thrown . During its flight the force of air resistance is the greatest.

A. Just after it is thrown
B. Half way up
C. At the top its trajectory
D. Halfway down

31. A fire emits a tone of 170Hz Take the speed of sound in air to be 340m/s. The wavelength of this sound is about.

A. 2.0m
B. 3.0m
C. 0.5m
D. 1.0m

32. The angular momentum L of a rigid is given by:

A. 1w
B. Rw
C. mrl
D. mrw

33. A water bed that's is 1.5m wide and 2.5m long weighs 1055N assuming the entire lower surface of the bed is in contact with the floor. What is the pressure the bed exerts on the floor?

A. 270 Pa
B. 250 Pa
C. 260 Pa
D. 280 Pa

34. Young's modules can be used to calculate the strain for a stress that is:

A. Just below the ultimate strength
B. Just above the ultimate strength
C. Well below the yield strength
D. Well above the yield strength

35. A mosquito's buzz is often rated with a decibel rating of 40 dm. Normal conversation is often rated at 60 db. How many times more intense is normal conversation compared to a mosquito's buzz.

A. 100
B. 20
C. 400
D. 2

36.Which of the following statement/s is/ are true?

1) The weight of a man on the Moon is smaller than on the Earth
2) The mass of a man is the same on both the Moon and the Earth.
3) We cannot determine our own mass in the outer space because there is no gravity.

A. 1 Only
B. (1)And (2)only
C. 2 Only
D. (2)And (3)only

37.The angular momentum vector of Earth about its rotation axis, Due to its daily rotation, is directed:

A. Tangent to equator toward the east
B. Tangent to equator toward the west
C. North
D. south

38.When body moves with constant acceleration the velocity time graph is:

A. Hyperbola
B. Straight line
C. Curve
D. Parabola

39. The persistence of audible sound due to the successive reflections from the surroundings objects even after the source has stopped to the produced that sound is called

A. Reverberation
B. Rarefaction
C. Reflection
D. Echo

40. A vector A is added to a vector B. The resultant vector A+B have greatest magnitude when

A. The magnitude of vector A+B does not depend on the directions of A and B
B. When vectors A and B are perpendicular
C. When vectors A and B are parallel and in the same direction
D. When vectors A and B are parallel and in the opposite direction

41. The unit of intensity of sound is:

A. Candela
B. Decibel
C. Kelvin
D. Meter

42. When number of bodies are such that they can exert force upon one another and no external agency exerts a force on them, they are said to form:

A. Non-inertial
B. Non isolated system
C. An isolated system
D. An internal frames of reference

43. Because a buoyant force acts in the opposite direction of gravity:

A. Objects submerged in water have a net force larger than their weight
B. Objects submerged in water have a net force smaller than their weight
C. Objects submerged in water appear to weigh more than they do in air
D. Objects submerged in water have a net force equal to their weight

44. if the mass of moving objects is doubled then its K.E becomes:

A. 4 times
B. 5 times
C. 16 times
D. 2 times

45.accelation of an object must be zero at a point where.

A. The average velocity is zero
B. The instantaneous velocity is constant
C. The instantaneous velocity is not zero but changing

D. The instantaneous velocity is zero but changing

46.back and forth in a leftward and rightward direction. This type of wave is known as a ___.

A. Mechanical
B. Longitudinal
C. Transverse
D. Electromagnetic

47.Final take off velocity of an airplane is 67 m/s. The length of runway is 2km, The constant acceleration is:

A. 2.24ms-1
B. 2.24 ms-2
C. 3.24 ms-2
D. 3.24 ms-1

48.The frequency which is note audible to the human ear is:

A. 50000Hz
B. 500 Hz
C. 50 Hz
D. 5000 Hz

49. The speed of sound is medium depends upon

A. Properties of the medium
B. Amplitude
C. Frequency
D. Wavelength

50. If the body whose mass is much less than a body at rest collide with it elastically. Then it bounces back with:

A. Half of the velocity
B. Double velocity
C. None of these
D. Same velocity

51. SI Unit of time period is _____.

A. Nanosecond
B. Minute
C. Hour
D. Second

52. Which of the following is note a characteristics of mechanical waves?

A. They travel in a direction which is at right angles to the direction of the particles of the medium.
B. They transport energy
C. They are created by a vibrating source
D. They consist of disturbances or oscillations of a medium

53. As the wavelength of a wave in a uniform medium increases, its frequency will____.

A. Remain the same
B. None of these
C. Increase
D. Decrease

54. Which of the following has the smallest moment of inertia about the central axis if all have equal masses and radii?

A. Ring
B. Disc
C. Sphere
D. Spherical shell

55. Which of the following cases is/are NOT a uniformly accelerated motion?

1) 1.A feather falls from certain height inside a vacuum tube
2) 2.A ball rolls along along a frictionless plane at uniform speed
3) 3.A coin falls from a certain height in air but air resistance is negligible

A. 1 and 2 only
B. 2 Only
C. 2 and 3 only

D. 1 only

56. Before the density of an object can be found what two measurements are required?

A. Mass and volume
B. Temperature and volume
C. Mass and length
D. Volume and length

57. Distance covered during one vibration of an oscillating body in terms of amplitude A:

A. 4A
B. 2A
C. A/2
D. A

58. If the distance between all pairs of particles of the body do not change by applying a force then the body is said to be

A. Large
B. Flexible
C. Rigid
D. Small

59. Two seconds waves are travelling through a container of unknown gas. Wave A has a wavelength of 1.2m. Wave B has a wavelength of 3.6m. The frequency of wave B must be___ the frequency of wave A

A. Three times larger than
B. The same as
C. One-third
D. One-ninth

60.The goal of all scientific inquiry (or scientific method) is:

A. To make everyone rich and happy
B. World dominion
C. Predicting natural events based on known patterns

D. World peace

61.Pre-second refers to the dimension of physical quantity:

A. Angular velocity
B. Angular momentum
C. Angular displacement
D. Angular acceleration

62. The unit kg m2/s can be used for:

A. Rotational inertia
B. Rotational kinetic energy
C. Angular momentum
D. Torque

63.The center of mass of Earth's atmosphere is:

A. Near the surface of Earth
B. Near the center of Earth
C. A little less than half ways between Earth's surface and the outer boundary of the atmosphere
D. Near the outer boundary of the atmosphere

64.Work may be done by_____

A. Only living organisms
B. Only non-living objects
C. Both living organisms and non-living organisms
D. Only vehicles

65.To determine if a rigid body is in equilibrium the vector sum of the gravitational forces acting on the particles of the body can be replaced by a single force acting at:

A. The center of gravity
B. A point on the boundary
C. The geometrical center
D. The center of mass

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66.Whenever an objects strikes a stationary objects of equal mass:

A. The first object must stop
B. The two objects can not stick together
C. The collision must be elastic
D. None of these

67. A glass of water is placed on a sheet of paper. Quickly drag the sheet of paper from under the glass of water without spilling the water is due to:

A. Newton's third law of motion
B. Acceleration
C. Lack of friction between paper and glass
D. Inertia

68. The dimension of Joule is:

A. [M L2 T-2]
B. [M L2 T-1]
C. [M L2 T-3]
D. [M L2 T-2]

69. The slope of a velocity-time the graph at any point may be identified with:

A. Instantaneous velocity
B. Instantaneous acceleration
C. Average acceleration
D. Instantaneous acceleration

70. Ali wants to lift a mass of 7.5 kg with constant velocity by a rope that passes through a frictionless pulley which is attached to the ceiling of room. Calculate the tension in the rope by neglecting the mass of the rope.

A. 0.75 N
B. 7.5 kg
C. 75 kg
D. 75 N

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71: If the magnitude of force applied is increased. The work done will _____

A. Become zero
B. Be decreased
C. Have no change
D. Be increased

72. A couple produces:

A. No motion
B. Linear and rotational
C. Purely rotational motion
D. Purely, linear motion

73. Which of the following statements are TRUE of sounds waves? Identify all that apply.

A. A sound wave is a transverse waves
B. To hear the sound of a tuning fork, the tines of the fork must move air from the fork to one's ear
C. A sound wave is a mechanical wave
D. Sound can travel through a vacuum

74. Add two vector of length 4m & 5m but their orientation is not known. The length after addition of these two vectors will be:

A. 9m
B. Less than 1 m
C. Between 9m and 5
D. Between 9m and 1 m

75. The application/s of dimensional analysis is/are:

1) To convert a physical quantity from one system of units to another
2) To check the dimensional correctness of a given equation
3) Establish a relationship between different physical quantities in an equation

A. 1 &3 only

B. 2 & 3 only
C. 1 only
D. 1,2 &3 only

76. People try to keep the ____ over their feet, in order to feel stable.

A. Mass
B. Center of gravity
C. Weight
D. Centre of mass

77. Which statement is not true for acceleration?

A. Riding your bike straight down the street at a constant speed
B. Riding your bike faster when you head down a hill
C. Slowing your bike ride so you can make it up a hill
D. Stopping your bike at an intersection

78. A force of 100N acts upon a body for five seconds. What will be the change in momentum?

A. 50 NS
B. 500 NS
C. 200 NS
D. 20 NS

79.In _____ objects returns to its original position if displacement slightly

A. Unstable equilibrium
B. Dynamic equilibrium
C. Rotational equilibrium
D. Stable equilibrium

80. For an objects in equilibrium the net torque acting on it vanishes only if each torque is calculated about:

A. The center of gravity
B. The same point
C. The center of mass

D. The geometrical center

81. The scalar product of two vectors is maximum when they are:

A. Parallel
B. Anti-parallel
C. Perpendicular
D. Null

82. Swimming becomes possible because of:

A. Third law of motion
B. Law of torque
C. Second law of motion
D. First law of motion

83. The projectile path is known as its:

A. Time of action
B. Range
C. Curve
D. Trajectory

84.A man, with his arms at his sides, is spinning on a light frictionless turntable. When he extends his arms:

A. His angular velocity
B. His angular velocity increases
C. His angular momentum remains the same
D. His rotational inertia decreases

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