

FBQ1: The frictional force in fluids is known as ____

Answer: *Viscosity*

FBQ2: The rise in the level of a liquid in a tube is h . If half the amount is poured outside, what will be the new rise in the liquid level?

Answer: $\frac{h}{2}$

FBQ3: Calculate the root-mean-square velocity of oxygen molecules at room temperature, 25 °C. Given that molar mass of oxygen and molar gas constant are 31.9998 g/mol and 8.3143 J/mol K, respectively in meter per second.

Answer: 482.1

FBQ4: Gases occupy volume of the ____.

Answer: *container*

FBQ5: A perfectly ____ body is defined as one which emits every wavelength with the maximum energy for each wavelength for the particular temperature of the body.

Answer: * black *

FBQ6: 3-vectors are only properly represented in a 3-dimensional ____.

Answer: *space*

FBQ7: The coefficient of limiting static friction is the ratio of the ____ to the normal force.

Answer: * frictional force*

FBQ8: An object is shot from the ground at 75m/s at an angle of 45 degrees above the horizontal. How high does the object get before beginning its descent?

Answer: 140 m

FBQ9: If a force of 40N acting in the direction due East and a force of 30N is acting in the direction due North. Then the magnitude of the resultant forces will be ____.

Answer: 50N

FBQ10: A Null vector is a vector whose magnitude is ____.

Answer: *zero*

FBQ11: The heat required to raise the temperature of the body through 1K is called ____.

Answer: *heat capacity*

FBQ12: When an object is in thermal equilibrium, it is losing and gaining heat at ____ rates.

Answer: *equal*

FBQ13: The physical pendulum is any real pendulum in which all the mass is taken to be concentrated at a ____.

Answer: * point *

FBQ14: The ____ of oscillations of a particle in simple harmonic motion is damped by resistive forces due to the surrounding medium.

Answer: *amplitude*

FBQ15: What is the unit of impulse?

Answer: *Ns*

FBQ16: The ____ occurs when the driving frequency is the same as the natural frequency of the oscillator.

Answer: *resonance*

FBQ17: Forces are called coplanar when all of them acting on body lie in one

_____.
Answer: *plane*

FBQ18: The ____ of the instantaneous centre of a moving rigid body is called centroid.
Answer: *locus*

FBQ19: The _____ is an aggregate of point masses such as that the relative separation between any two points remains invariant
Answer: *rigid body*

FBQ20: The general motion of a rigid body is a combination of _____ and rotation.
Answer: *translation*

FBQ21: The specific latent heat of vapourization of a liquid is the quantity of heat in joules required to change 1kg mass of the liquid at its _____ to gas at the same temperature.
Answer: *boiling point*

FBQ22: Radius of _____ is the radial distance from any given axis at which the mass of a body is concentrated without changing the moment of inertia of the body about that axis.
Answer: *gyration*

FBQ23: _____ forces meet at one point and have their lines of action in different planes.
Answer: *non-coplanar current*

FBQ24: Applied force is proportional to extension produced is a statement of _____ law.
Answer: *Hooke's*

FBQ25: A _____ is the turning effect caused by a couple.
Answer: *torque*

FBQ26: A _____ consists of two equal and opposite parallel forces.
Answer: *couple*

FBQ27: When a gas is allowed to expand at constant _____ the process is described as isothermal.
Answer: *temperature*

FBQ28: The velocity of a particle moving with simple harmonic motion is ____ at the mean position.
Answer: *maximum*

FBQ29: Instantaneous velocity is the velocity of a particle at some _____ of its path.
Answer: *points*

FBQ30: According to principle of moment, if a system of coplanar forces is in equilibrium, then the algebraic _____ of their moments about any point in their plane is zero
Answer: * sum *

FBQ31: _____ is that which enables a body to perform work.
Answer: *Energy*

FBQ32: When trying to turn a key into a lock, _____ of forces are applied.
Answer: *couple*

FBQ33: According to the kinetic-molecular theory, particles of matter are in motion in both gas and _____.

Answer: *liquid*

FBQ34: The main condition for the rigid body is that the distance between various particles of the body does not ____.

Answer: *vary*

FBQ35: A piece of stone has mass 80kg and density of 0.10 kg per meter cube. What is its volume in meter cube?

Answer: *800*

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Multiple Choice Questions (MCQs):

MCQ1: Calculate the pressure due to the water at a depth of 15 m in water. Given that density of water is 1000 kg/squared metre and acceleration due to gravity is 9.8 metres per squared second.

Answer: 147000 Newton per square metre

MCQ2: A cubical block of concrete edge 0.30 m, rests on a horizontal surface. If its weight is 240N, what pressure does it exert on the surface?

Answer: 888.89 N/m²

MCQ3: Kerosene is supplied to a tap from a tank in which the kerosene level is 1.5 m above the tap. If the density of kerosene is 800 kg/m³. Calculate pressure of the kerosene at the tap.

Answer: 1200 Pa

MCQ4: The sum of the pressure at any point plus the kinetic energy per unit volume plus the potential energy per unit volume is always a constant". This statement is coined from

Answer: Charles' law

MCQ5: A metal rod 80cm long lengthens by 0.090cm when its temperature rises by 93.6°C. What is the linear expansivity of the metal?

Answer: 0.0012/K

MCQ6: A body moves, from rest with a constant acceleration of 5 m per squared sec. The distance covered in 5 sec is most nearly

Answer: 100m

MCQ7: The amount of heat energy per mole that must be added or removed when a substance changes from one phase to another is called ____.

Answer: Specific heat

MCQ8: A football player could routinely kick a ball at a horizontal speed of 160 km/hr. How long did the ball take to reach a point 18.4m away?

Answer: 32s

MCQ9: The rate of evaporation decreases with increasing ____

Answer: Pressure

MCQ 10: The ____ pendulum is any real pendulum in which all the mass is taken to be concentrated at a point.

Answer: physical

MCQ 11: The amplitude of oscillations of a particle in simple harmonic motion is damped by ____ forces due to the surrounding medium

Answer: Resistive

MCQ 12: A man will exert the greatest pressure on a bench when he ____

Answer: stands on the toes of one foot

MCQ 13: The gravitational force on a satellite produces the centripetal acceleration that keeps the satellite in

Answer: Orbit

MCQ 14: The ____ occurs when the driving frequency is the same as the natural frequency of the oscillator.

Answer: Sound

MCQ15: A 2kg box is at the top of a frictionless ramp at an angle of 60° . The top of the ramp is 30m above the ground. The box is sitting still while at the top of the ramp, and is then released. What is the velocity of the box just before it hits the ground?

Answer: 22.8 m/s

MCQ16: An ungraduated mercury thermometer attached to a millimeter scale reads 22.8mm in ice and 242mm in steam at standard pressure. What will the millimetre read when the temperature is 20°C ?

Answer: 132.4mm

MCQ17: Convert 45°C to $^\circ\text{F}$

Answer: 109°F

MCQ18: Alcohol boils at

Answer: 100°C

MCQ19: The path followed by the projectile is known as

Answer: Curve

MCQ20: How much heat is required to melt 1.5kg of ice and then to raise the temperature of the resulting water to 50°C ?

Answer: $3.15 \times 10^5\text{J}$

MCQ21: When matter is heated, it

Answer: Shrinks

MCQ22: If the linear expansivity of a metal is $2.0 \times 10^{-5} \text{ }^\circ\text{C}^{-1}$, calculate its cubical expansivity.

Answer: $2.0 \times 10^{-5} \text{ }^\circ\text{C}^{-1}$

MCQ23: A fixed mass of gas of volume 546cm^3 at 0°C is heated at constant pressure. Calculate the volume of the gas at 20°C .

Answer: 546cm^3

MCQ24: When a gas is allowed to expand without heat entering or leaving the gas, the gas is said to undergo an ____.

Answer: isothermal expansion

MCQ25: Effect of a force on a body depends upon ____

Answer: magnitude

MCQ26: The work done by stretching a string is ____.

Answer: Zero

MCQ27: The unit of work is the unit of ____ multiplied by the unit of distance.

Answer: Force

MCQ 28: A system that its boundary allows transfer of mass and energy into or out of the system is known as ____.

Answer: Close system

MCQ 29: Two bowling balls, each with a mass of 8.52 kg, are traveling toward each other. One bowling ball has a velocity of 2.45 m/s to the right while the

other bowling ball has a ____

Answer: 1.20 Ns

MCQ 30: The algebraic sum of the resolved parts of a number of forces in a given direction is equal to the resolved part of their resultant in the same direction. This is as per the principle of ____.

Answer: independence of forces

MCQ 31: A baseball is hit such that it travels straight upward after being struck by the bat. A fan observes that it requires 3.00 s for the ball to reach its maximum height. Find its initial velocity. Ignore the effects of air resistance.

Answer: 2.94 m/s

MCQ 32: A 1500 kg truck traveling at 80 km/h collides with another car of mass 1000 kg traveling at 30 km/h in the same direction. The two cars stick together after the collision. Their speed immediately after the collision is ____.

Answer: 40 km/h

MCQ 33: You throw a ball with a speed of 25.0 m/s at an angle of 40.0° above the horizontal directly toward a wall. The wall is 22.0 m from the release point of the ball. How long does the ball take to reach the wall?

Answer: 11.5 s

MCQ34: Which of the following do not have identical dimensions?

Answer: Momentum and impulse

MCQ 35: A rifle is aimed horizontally at a target 30m away. The bullet hits the target 1.9 cm below the aiming point. What is the bullet's time of flight?

Answer: 0.062 s