eExam Question Bank

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Question Type	Question	A	B	C
FBQ	The [ ] of a force about a point is measured by the product of the force and the perpendicular distance from the line of action of the force to the point.	moment	torque	
FBQ	A [ ] body is one in which the constituent parts have fixed distances from each other.	rigid	rigid	
FBQ	The sharpness of the [ ] curve is called the Q-factor	resonance	resonance	
FBQ	[ ] occurs when the driving frequency is the same as the natural frequency of the oscillator resulting in a maximum amplitude of oscillation	Resonance	Resonance	
FBQ	A [ ] oscillation is one for which periodic impulse drives it against resistive forces	forced	driven	
FBQ	A heavily [ ] motion is one for which no oscillation occurs when it is released.	damped	damped	
FBQ	[ ] oscillation is one for which the amplitude of oscillation is constant in the absence of resistive forces	Undamped	Free	
FBQ	An oscillation is said to be [ ] if its amplitude of the oscillation gradually decreases to zero over time as a result of resistive force arising from the surrounding medium	damped	damped	
FBQ	During simple harmonic motion of an object, there is a constant interchange of [ ] of the object between its kinetic and potential forms	energy	energy	
FBQ	If the displcacement from its equilibrium position of a particle undergoing simple harmonic motion is very small, the [ ] force obeys Hooke's law	restoring	restoring	
FBQ	The displacement, velocity and acceleration of a particle undergoing a simple harmonic motion could be represented by a [ ] function	sinusoidal	sinusoidal	
FBQ	A simple harmonic motion is a periodic vibration of a body whose acceleration is directly proportional to its [ ] from a fixed point and is always directed towards this point i.e. a = - constant x	distance	displacement	
FBQ	[ ] force is required for a simple harmonic motion to continue	restoring	restoring	
FBQ	A joule is a unit of [ ]	Work	energy	

	FBQ	1 horse power is equal to [ ] W	746	746	
	FBQ	A physical quantity which has the same dimensions as moment of a force is [ ]	work	work	
	FBQ	Liquids which make [ ] angles of contact do not wet the surfaces of their containers	obtuse	obtuse	
	FBQ	Mecury in a glass tube forms [ ] meniscus.	convex	convex	
	FBQ	Lead shots are manufactured by spraying molten lead from a height so that they form spheres as they fall through the air under the influence of the force of gravity. The forces responsible for the formation of the spheres are [ ] forces.	surface tension	surface tension	
	FBQ	[ ] force between glass and water molecules is greater than the [ ] force between water molecules.	adhesive, cohesive	adhesive, cohesive	
	FBQ	The angle of contact for clean water and clean glass is [ ] _.	zero	0	
	FBQ	The coefficient of [ ] is defined as the force per unit length acting normally on one side of a line on the surface of a liquid	surface tension	surface tension	
	FBQ	Two neighbouring layers of a fluid have different velocities 4cm/s and 2cm/s respectively They are seperated by a distance of 4cm. Their average velocity gradient is [ ] /s to one place of decimal	0.5	0.5	
	FBQ	A person standing close to a fast moving trai experinces suction effect. This is an application of [ ] __'s principle	Bernoulli	Bernoulli	
	FBQ	Poise is the SI unit of [ ] _.	coefficient of viscosity	coefficient of viscosity	
	FBQ	The frictional force required to maintain a unit velocity gradient between two layers of a fluid in relative motion, each of a unit area, is the coefficient of [ ] _.	viscosity	viscosity	
	FBQ	The viscous force F acting on a spherical body of radius r moving through a viscous fluid at velocity v is given as $F=6\pi\eta{r}v$. This is [ ] __'s law.	Stoke	Stoke	
	FBQ	An object falling freely through a viscous fluid soon attains a maximum andd constant velocity called [ ]	terminal velocity	terminal velocity	
	FBQ	The equation $P + \frac{1}{2}\rho{v^{2}} +\rho{gy }= consant$, where ρ stands for density, P for pressure, v for fluid velocity, g the acceleration due to gravity and y the height is [ ] _'s equation	Bernoulli	Bernoulli	
	FBQ	The term [ ] defines frictional force in fluids	viscosity	viscosity	
	FBQ	The term [ ] flow is used to describe uniform and non-turbulent flow of a fluid, assuming the liquid is incompressible.	laminar	laminar	

	FBQ	[ ] law states that if two systems A and B are seperately in thermal equilibrium with a third system C, then they are in thermal equilibrium with each other	zeroth	zeroth	
	FBQ	The path followed by a fluid particle in a steady flow as it travels the length of a pipe is referred to as [ ]	streamline	streamline	
	FBQ	[ ] 's apparatus is used to compare the relative densities of two different liquids	Hare	Hare	
	FBQ	[ ] __'s principle explain the uniform or equal transmission of pressure in all directions in a fluid	Pascal	Pascal	
	FBQ	A body wholly or partially immersed in a fluid experience [ ] which is equal to the weight of the fluid displaced	upthrust	bouyant force	
	FBQ	The kinetic energy per degree of freedom of a molecule of a monoatomic gas can be given interms of k and T where the symbols have thier usual meaning, as KE = [ ] . You may choose your answer from the list:(3kT/2, kT/3, kT/2, kT)	kT/2	kT/2	
	FBQ	[ ] distribution is concerned with the distribution molecular speeds of a given closed system at a particular temperature	Maxwell	Maxwell	
	FBQ	In the equation E = Tensile stress/tensile strain, E stands for [ ] __'s modulus of elasticity	Young	Young	
	FBQ	A material that can easily be drawn into a wire as it undergoes plastic deformation is said te be [ ]	ductile	ductile	
	FBQ	[ ] point is reached when the molecules of a loaded piece of wire begin to slide past each other as it exceeds its elastic limit	yield	yield	
	FBQ	The process whereby molecules move from the region of high concentration to that of low concentration until equilibrium is established within the system is called [ ]	diffusion	diffusion	
	FBQ	$$\vec{i}\cdot\vec{i}=\vec{j}\cdot\vec{j}=\vec{k}\cdot\vec{k}$$= [ ]	1	1	
	FBQ	In the quantity $$\vec{a}=a_{x}\vec{i}+a_{y}\vec{j}$$, $$\vec{j}$$ is the [ ] along the y-direction.	unit vector	unit vector	
	FBQ	A [ ] quantity is completely specified by its magnitude and direction	vector	vector	
	FBQ	Work and moment of a force have the same [ ]	dimension	dimensions	
	FBQ	The [ ] of a physical quantity is the relationship between the unit of the quantity and the units of the fundamntal quantities	dimension	dimension	
	FBQ	Quantities units which are obtained by a combination of the basic or fundamental quantities are called [ ] quantities	derived	derived	

	FBQ	All motions are _____ and not absolute	relative	relative	
	FBQ	A _____ of reference is a set of coordinate axes used to describe the motion of an object.	frame	frame	
	MCQ	Which of the following substances has the highest viscosity at room temperature?	Water	kerosine	palm oil
	MCQ	In which of the following phenomena is surface tension important?	the floating of a boat in water	the floating of a steel wire in water	the floating of a ball air
	MCQ	Which of these is correct about viscosity?	it increases with increase in temperature	it varies with the relative velocity of the surfaces in contact	it is does not vary fr liquid to another
	MCQ	The molecules of a liquid are held together by what type of forces?	cohesive forces	adhesive forces	viscosity
	MCQ	A string of natural length L extends to a new length L' under tensile force F. If Hooke'S law applies, the work done in stretching the spring is ----------	1/2FL	1/2FL'	1/2 F(L-L')
	MCQ	A wire of cross-sectional area of $6\times10{-5}m^{2}$ and length 50cm stretches by 0.2mm under a load of 3000N. Calculate the Young's modulus for the wire	$$8\times{10^{10}}Nm^{-2}$$	$1.25\times10^{11}Nm^{-2}$	$2.5\times10^{11}N
	MCQ	The mechanism of heat transfer from one point to another through vibration of the molecules of the medium is called ----------	convection	conduction	radiation
	MCQ	One of these is an example of thermal radiation detector	bolometer	thermometer	thermal rod
	MCQ	One of these is NOT a basic assumption of kinetic theory of ideal gases	a gas consist of a large number of molecules	the attraction between the molecules is negligible	the kinetic energy o molecules is changi continuously
	MCQ	Thermal expansion of a solid material depends on the following EXCEPT	the nature of the material making up the solid	the range of the temperature change	the initial dimension solid
	MCQ	An electric kettle contains 1.5 kg of water at $$100 ^{o}$$ and powered by a 2.0 kW electric element. If the thermostat of the kettle fails to operate, approximately how long will it take for the kettle boil dry? (Take the specific latent heat of vaporization of water as $2000kJkg^{-1}) $	500s	1000s	1500s
	MCQ	Given that the specific capacity of ice is one-half that of water, does is take more thermal energy to raise the temperature of 5 g of water or 5 g of ice by $$6^{o}C?$$	water	ice	It takes the same ar of thermal energy fo one
	MCQ	The method of mixtures as a means of measuring the amount of heat of a substance depends of the principle of conservation of	momentum	energy	angular momentum
	MCQ	Which of the following is NOT true?	evaporation occurs at any temperature of a liquid	boiling takes place only at the surface of the liquid	evaporation occurs the surface of a liqu
	MCQ	The statement "the specific latent heat of fusion of ice is 3.3×10^{5}J/kg" means	3.3×10^{5}J of heat energy is required to raise the temperature if ice to melting point	$ 3.3\times 10^{5}$J of heat energy is absorbed to condense water to ice at 0^{o}C	$ 3.3\times 10^{5}$. heat energy is requi change 1 kg of pure 0^{o}$C to 1kg of w 0^{o}C
	MCQ	The amount of heat stored in a substance depends on all of the following EXCEPT	mass of the substance	shape of the substance	natureof the substa

	MCQ	Which of the following is NOT an effect of heat on a substance?	convection	expansion	temperature change
	MCQ	The absolute zero temperature refers to the temperature at which	pure ice, water and water vapour at normal atmospheric pressure are in equilibrium	theoretically all thermal motions will cease	pure ice melts at no atmospheric pressu
	MCQ	Tin melts at 232 under standard atmospheric pressure. Express this temperature in kelvin	449.16K	505.15K	60.91K
	MCQ	When the junctions of two dissimilar metals are maintained at different temperatures an electromotive force is is set up in the circuit of which these junctions are a part. A pair of juntions of this kind is known as	resistance thermometer	thermocouple	pyrometer
	MCQ	On what thermometric property does the working of a thermistor depend?	change in pressure with change in temperature	change in volume at constant pressure with change in temperature	change in electrical resistance with char temperatue
	MCQ	An ungraduated mercury thermometer attached to a millimeter scale reads 22.8mm in ice and 242mm in steam at standard pressure. What will the millimeter read when the temperature is 20^{o} C?	66.64mm	43.84mm	219.20mm
	MCQ	A wall or partition that allows free exchange of heat energy between two systems is referred to as ----------	isothermal	upper fixed point and the Lower fixed point	adiabatic
	MCQ	The fundamental interval of a thermometric scale is	the temperature scale	the difference between the upper and the lower fixed points	above the upper fixe
	MCQ	Which of the following is NOT a thermometric property?	the volume of a liquid	the electrical resistance of a conductor	the density of a liqui
	MCQ	The term that best describes the need to hold the butt of a riffle firmly against the shoulder when firing to minimise impact on the shoulder is	forward displacement	forward acceleration	recoil velocity
	MCQ	A mass accelerates uniformly when the resultant force acting on it	is zero	is constant but not zero	increases uniformly respect to time
	MCQ	A ball is kicked and flies from point P to Q following a parabolic path in which the highest point reached is T. The acceleration of the ball is	zero at T	greatest at P	greatest at T and Q
	MCQ	How fast must a ball be rolled along the surface of a 70-cm high table so that when it rolls off the edge it will strike the floor at the same distance (70cm) from the point directly below the edge of the table?	174.5 cm/s	185.2 cm/s	215.3 cm/s
	MCQ	The motion of a ball rolling down a ramp is one with	constant speed	increasing acceleration	constant acceleratic
	MCQ	The trajectory of a projectile is	an ellipse	a circle	a parabola
	MCQ	A cart is moving horizontally along a straight line with constant speed of 30 m/s. A projectile is fired from the moving cart in such a way that it will return to the cart after the cart has moved 80 m. At what speed (relative to the cart) and at what angle (to the horizontal) must the projectile be fired?	35.8 m/s at 24 degrees	38.6 m/s at 54 degrees	27 m/s at 35 degree
	MCQ	What is common to the variation in the range and the height of a projectile?	horizontal velocity	time of flight vertical velocity, horizontal acceleration	vertical velocity
	MCQ	A stone thrown from ground level returns to the same level 4 s after. With what speed was the stone thrown? Take $g = 10ms^{-2}$	20 m/s	10 m/s	30 m/s

	MCQ	An object is thrown upward from the edge of a tall building with a velocity of 10 m/s. Where will the object be 3 s after it is thrown? Take $g = 10ms^{-2}$	15 m above the top of the building	30 m below the top of the building	15 m below the top building
	MCQ	A body hangs from a spring balance supported from the roof of an elavator. If the elavator has an upward acceleration of $3ms^{-2}$ and the balance reads 50 N, what is the true weight of the body?	50.0 N	28.3 N	38.3 N
	MCQ	Which of the following contributes to the instability of an object?	low centre of gravity	broad base of the object	low potential energy
	MCQ	A rope suspended from a ceiling supports an object of weight W at its opposite end. Another rope tied to the first at the middle is pulled horizontally with a force of 30N. The junction P of the ropes is in equilibrium. Calculate the weight W and the tension T in the upper part of the first rope	27.2N and 39.2N	40.5N and 62.5N	30.4N and 53.7N
	MCQ	Which of the following does NOT refer to the terms description of stability of on an object?	unstable equilibrium	stable equilibrium	neutral equilibrium
	MCQ	Which of the following physical concepts best explains why passengers in fast moving cars should always fasten their seat-belts?	moment	terminal velocity	inertia
	MCQ	A 50kg boy suspends himself from a point on a rope tied horizontally between two vertical poles. The two segments of the rope are then inclined at angles 30 degrees and 60 degrees respectively to the horizontal.The tensions in the segments of the rope in newtons are	25.0 and 43.3	50.0 and 25.0	100.0 and 43.5
	MCQ	A boy intends to move an m-kg crate across the floor by applying a constant force P newtons on it.The coeficient of friction between the floor and the crate is μ. Which of these is the best option for his task?	Pull the crate with P applied horizontally	Push the crate with P inclined at an angle above the horizontal	Pull the crate with P inclined at an angle the horizontal
	MCQ	A man leaves the garrage in his house and drives to a neighbouring town which is twenty kilometres away from his house on sight-seeing. He returns home to his garrage two hours after. What is his average velocity from home in km/h?	10	0	20
	MCQ	The resultant of vectors $\vec{A}$ and $\vec{B}$ has a magnitude of 20 units.$\vec{A}$ has a magnitude of 8 units, and the angle between $\vec{A}$ and $\vec{B}$ is 40^{o}. Calculate the magnitude of $\vec{B}$	12.6	16.2	14.8
	MCQ	Given three vectors $\vec{a} = {-}\vec{i}{-}4\vec{j}+2\vec{k}$, $\vec{b} = 3\vec{i}+2\vec{j}-2\vec{k}$, $\vec{c} = 2\vec{i}{-}3\vec{j}+\vec{k}$, calculate $\vec{a}\cdot(\vec{b}\times\vec{c})$	${-6}$	6	9
	MCQ	Two forces act on a point object as follows: 100 N at 170^{o} and 100N at 50^{o}. Find the resultant force	110 N at 50^{o}	110 N at 100^{o}	100 N at 110^{o}
	MCQ	The speed of 90 hm/hr is equal to ---------- m/s	25	90	150
	MCQ	What are the dimensions of power (time rate of change of expending energy)	MLT^{-2}	ML^2T^{-3}	$ML^{2}T^{-2}$
	MCQ	Which of the following statements is not correct about reference frames?	Laws of physics are invariant (retain the same form) in inertial reference frames	In non-inertial reference frames the motion of objects depend only on the interactions of constituent particles among themselves	Any reference frame moving at constant with respect to an in reference frame is a inertial
	MCQ	A passenger in a moving car and a passerby standing at the road side see each other as moving in the opposite direction. Which of the following is NOT true?	The passenger is in motion relative to the passer-by	The passer-by is stationary relative to the passenger	Both observers are motion relative to ea other

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