A Valuable material from SS PRITHVI's

Class 11

2023-24

PRITEDUCATION

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CLASSIFICATION OF QUESTIONS

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SUBJECT:

PHYSICS

MR. SS PRITHVI

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DEFINITION / WHAT IS ? TYPE

- What are physical quantities and its types
- unit and its types
- ampere
- candela
- 1 Radian
- one steradian
- accuracy
- Precision
- random error
- Gross error
- rounding off
- dimension and dimensionless quantities
- cartesian co-ordinate system
- scalar and vector
- displacement and distance
- angular displacement
- angular velocity
- non uniform circular motion
- position vector
- projectile
- point mass
- inertia and types
- one newton
- static friction
- kinetic friction
- pseudo force
- non inertial frames
- impulsive force
- inertial frames
- centripetal force
- work various types of potential energy
- power
- coefficient of restitution
- centre of mass
- centre of gravity
- couple
- radius of Gyration
- gravitational field
- gravitational potential energy
- gravitational potential
- escape speed
- weight
- stress and strain
- coefficient of viscosity
- Upthrust or buoyancy
- Terminal velocity
- Bernoulli's theorem
- surface tension of liquid
- angle of contact of solid and liquid
- capillarity or capillary action
- Young's modulus
- bulk modulus
- rigidity or shear modulus
- microscopic origin of pressure
- microscopic origin of temperature
- degree of freedom
- mean free path
- factors affecting mean free path
- force constant of spring
- time period Of simple harmonic motion
- frequency of simple harmonic motion
- time period Of simple pendulum

- epoch

DIFFERENCE BETWEEN TYPE QUESTIONS

- velocity and average velocity
- centripetal and centrifugal forces
- Static and kinetic friction
- conservative and nonconservative forces
- elastic and inelastic collision
- stable and stable equilibrium
- slipping and sliding
- gravitational potential and gravitational potential energy
- geostationary and polar satellites
- streamlined and turbulent flow
- Adhesive and Cohesive forces
- periodic and non periodic force
- simple harmonic motion and angular harmonic motion
- transverse and the longitudinal waves
- red and blue shift in Doppler Effect
- intensity and loudness of sound
- travelling waves or progressive waves and standing waves or stationary waves
- different types of sound waves- infrasonic waves audible waves and ultrasonic waves
- state and path functions
- intensive and extensive properties
- reversible and Irreversible process

LAWS AND PRINCIPLES

- principle of homogeneity of dimensions
- Newton's first law
- Newton second law
- Newton's third law
- empirical laws of Static and kinetic friction
- law of conservation of energy
- lami'sbtheorem
- law of conservation of angular momentum
- Kepler's three laws
- Newton's law of gravitation
- hooke's law of elasticity
- poissons ratio
- Pascal's law
- Archimedes principle
- law of floatation
- Reynolds number
- Bernoulli's theorem

- principle and usage of Venturi metre
- law of equipartition of energy
- postulates of kinetic theory of gases
- laws of simple pendulum
- Doppler Effect
- beat phenomenon
- Stephen boltsman law
- wien's law
- clausius statement
- entropy statement

REASONING TYPE

- can angular momentum of a Planet conserved?
- Is potential energy a property of body justify
- why is energy of satellite or any planet is negative
- why there is no lunar and Solar eclipse every month
- how will you prove that itself is spinning
- which is more elastic rubber or steel
- spring balance shows wrong reading after long use why
- two streamlines cant cross Each Other why
- what happens to pressure inside soap bubble when air is blown into it
- moon has no atmosphere
- reason for Brownian movement
- soldiers are not allowed to March on Bridge why
- heat flows from hot body to cold body
- is it correct to say an object has more heat justify
- can we measure heat by touching an object justify
- oil placed on the surface of water spreads out but a drop of water place on oil contracts to a spherical shape why.

CONDITIONS

- condition for 2 vectors are perpendicular
- condition for car skidding
- condition for perfect inelastic collision
- condition for force not produce torque
- condition for pure rolling

APPLICATIONS

- three applications of viscosity
- Applications of surface tension
- applications of capillarity

METHODS

- ❖ how will you measure the diameter of moon using Parallax method
- ❖ how will you you measure using screw Gauge and Vernier Caliper
- ❖ method of measuring angle of repose
- ❖ mention any two physical significance of moment of inertia
- ❖ method to find centre of gravity of irregular shaped lamina
- ❖ explain formation of Beats

DERIVATION THREE MARKS

- propagation of errors in addition multiplication subtraction and division
- equations of motion of a particle falling vertically and projected vertically
- centripetal acceleration
- non-uniform circular motions total acceleration calculation
- show that impulse is change of momentum
- loss of kinetic energy in inelastic collision
- perpendicular axis theorem
- relation between Momentum and kinetic energy
- Newton's Inverse Square Law
- variation of G with latitude
- expression for elastic energy stored in stretched wire
- stoke's law
- energies pocessed by liquids
- state and prove Pascal's law
- state and prove Archimedes principle
- expression for terminal velocity
- expression for RMS speed average speed most probable speed of a gas molecule

- relation between average kinetic energy and pressure
- boyles, Charles law and avogadro law based on kinetic theory
- Kinetic interpretation of temperature
- Springs connected in series and parallel
- equation of time period Of linear harmonic oscillator
- relation between frequency wavelength and velocity of a wave
- law of transverse vibrations in stretched strings
- derivation of ideal gas law from boyles and Charles law
- linear,aerial and volumetric expansion

DERIVATION 5 MARKS

- kinematic equations of motion by calculus method
- Triangular law of addition
- Range maximum height angle with respect to horizontal projection
- concurrent forces and lamis theorem
- motion of blocks connected in vertical and horizontal motion
- work done by constant and variable force
- work kinetic energy theorem
- elastic collision and its 4 case
- motion in vertical cycle
- bending of cyclist in curves
- moment of inertia of rod ring and disc
- parallel axis theorem
- rolling on inclined plane
- expression of kinetic energy in rotation
- expression for gravitational potential energy
- prove that at height h, U= mgh
- explain weightlessness using lift as an example
- expression for escape speed

- variation of g with respect to depth and height or altitude
- time period Of satellite
- energy of satellite
- orbital velocity and its expression
- Bernoulli's theorem
- hookes law
- equation for total pressure is formula access pressure inside a Liquid Drop liquid bubble and
- soap bubble
- expression for surface tension By Capillary riseh method
- construction and working of venturi metre
- pressure exerted by gas molecules on container
- ratio of two specific heat capacity of monatomic diatomic and triatomic molecules
- mean free path
- state and explain equipartition of energy
- angular harmonic oscillation
- discuss simple pendulum in detail
- horizontal and vertical oscillations of spring
- energy in simple harmonic motion
- velocity of transverse wave produced in a string is V equal to root of t by u
- prove how interferences of wave is formed
- formation of stationery waves and it's characters
- closed and open organ pipe
- Doppler effect and its cases
- calorimetry
- Newton's law of cooling
- MEYER's relation
- work done in isothermal process
- work done in adiabatic process
- isobaric process and its work done
- heat engine and its efficiency
- carnot engine and its efficiency
- working of refrigerator

THEORY TYPE 3 MARKS AND 5 MARKS

- limitations of dimensional analysis
- rules for obtaining significant figures
- scalar product
- vector product
- using free body diagram show that pulling is easier then pushing an object
- types of friction
- origin of friction
- Newton's laws and its importance
- centrifugal force

- rolling friction
- need for banking of tracks
- characters of elastic and inlastic collision
- types of equilibrium
- conservation of angular momentum
- Conservation of Linear Momentum
- important features of law of gravitation
- detail about geostationary and polar satellite
- factors affecting surface tension of liquid
- total degrees of freedom of monatomic diatomic and triatomic molecule
- Maxwell Boltzmann distribution function
- Brownian motion
- what is simple Harmonic Motion
- describe harmonic motion as a projection of uniform circular motion
- oscillations of liquid column U tube
- four types of oscillations
- discuss ideal gas laws Newton's
- formula and laplace correction
- reflection of sound in curved surfaces
- concept of superposition principle
- sonometer and its working
- how will you determine the velocity of sound using resonance air column apparatus
- thermal expansion
- various modes of heat transfer
- four types of thermodynamic equilibrium
- joule's mechanic equivalent of heat
- isothermal process
- adiabatic process
- isochoric process

ALL THE BEST !

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