



INDIAN SCHOOL MUSCAT

REVISED YEAR PLAN

2020-2021

CLASS –XI PHYSICS

MONTH	UNIT	SUB -UNIT	DESTINATION SUCCESS
APRIL 2020	UNIT1- PHYSICAL WORLD AND MEASUREMENT	<p>Deleted Topics: Physics- scope and excitement, nature of physical laws, Physics, technology and society</p> <p>Chapter–2: Units and Measurements Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; significant figures. Dimensions of physical quantities, dimensional analysis and its applications.</p>	<ol style="list-style-type: none"> 1.System of units 2. Fundamental forces in nature 3.System of units 4.Measurement of length, mass and time 5.Error analysis 6.Significant figures 7.Dimensional analysis
MAY 2020	UNIT-2 KINEMATICS	<p>Deleted Topics: Frame of reference, Motion in a straight line: Position- time graph, speed and velocity</p> <p>Chapter–3: Motion in a Straight Line Motion in a straight line: Elementary concepts of differentiation and integration for describing</p>	<ol style="list-style-type: none"> 1.Motion in one dimension 2. Acceleration, deceleration Motion

		<p>motion, uniform and non- uniform motion, average speed and instantaneous velocity, uniformly accelerated motion, velocity - time Relations for uniformly accelerated motion (graphical treatment).</p>	<p>4.Uniform and non-uniform motion 5.Equations for uniformly accelerated motion 6.Relative motion</p>
JUNE 2020	<p>UNIT-2 KINEMATICS (Continued)</p> <p>UNIT-3 LAWS OF MOTION</p>	<p>Chapter–4: Motion in a Plane Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, relative velocity, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors. Motion in a plane, cases of uniform velocity and uniform acceleration projectile motion, uniform circular motion.</p> <p>Deleted Topics: Intuitive concept of force, Inertia, Newton’s first law of motion; momentum and Newton’s second law of motion; Impulse; Newton’s third of motion</p> <p>Chapter–5: Laws of Motion Law of conservation of linear momentum and its applications. Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction,</p>	<p>1.Addition and subtraction of vectors 2.Multiplication of vectors 3.Motion in a plane 4.Projectile motion 5.Motion of a projectile 6.Uniform circular motion</p>
JULY 2020	UNIT-3 LAWS OF MOTION (continued)	Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).	<p>1.Friction 3.Centripetal and centrifugal force 4.Uniform circular motion</p>

	Unit 4: Work, Energy and Power	<p>Chapter–6: Work, Energy and Power Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: conservation of mechanical energy (kinetic and potential energies); non-conservative forces: motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.</p>	<ol style="list-style-type: none"> 1. Work and power 2. Energy 3. Forms of energy 4. Types of energy-kinetic energy 5. Types of energy-potential energy 6. Gravitational potential energy 7. Elastic potential energy 8. Law of conservation of energy 9. Transformation of energy 10. Collision
AUGUST 2020	Unit 5: Motion of System of Particles and Rigid Body	<p>Deleted Topics: Statement of parallel and perpendicular axes theorem and their applications</p> <p>Chapter–7: System of Particles and Rotational Motion Centre of mass of a two-particle system, momentum conservation and centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod. Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).</p>	<ol style="list-style-type: none"> 1. Centre of mass 2. Torque and equation of rotational motion 3. Angular momentum and conservation of 4. angular momentum 5. Moment of inertia 6. Work, energy and power in rotational motion
	Unit 6: Gravitation	<p>Deleted Topics: Kepler’s laws of planetary motion, Acceleration due to gravity Universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth.</p>	<ol style="list-style-type: none"> 1. Newton’s universal law of gravitation

		Gravitational potential energy and gravitational potential, escape velocity, orbital velocity of a satellite, Geo-stationary satellites.	2.Variation in acceleration due to gravity with altitude
September 2020		RIVISION AND HALF- YEARLY EXAMINATION	
October 2020	Unit VII: Properties of Bulk Matter	<p>Deleted Topics: Elastic behavior, Shear modulus of rigidity, Poisson's ratio; Elastic energy Heat, Temperature, Heat transfer- Conduction, convection and radiation</p> <p>Chapter–9: Mechanical Properties of Solids Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus,</p> <p>Chapter–10: Mechanical Properties of Fluids Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its applications. Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise.</p> <p>Chapter–11: Thermal Properties of Matter Thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity.</p>	<p>1.Elastic behavior of solids 2.Hooke's law 3.Spring balance 4.Moduli of elasticity</p> <p>1.Pascal's law 2.Experimental demonstration of Pascal's law 3.Fluid flow 4.Fluid flow 5.Viscosity and its coefficient 6.Application of Bernoulli's principle 7.Aerofoil 8.Viscosity</p> <p>1. Thermal conductivity</p>

		Thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law, Greenhouse effect.	
NOVEMBER 2020	Unit 8: Thermodynamics Unit 9: Behaviour of Perfect Gases and Kinetic Theory of Gases	Deleted Topics: Heat engine and refrigerator Chapter–12: Thermodynamics Thermal equilibrium and definition of temperature (zeroth law of thermodynamics), heat, work and internal energy. First law of thermodynamics, isothermal and adiabatic processes. Second law of thermodynamics: reversible and irreversible processes Chapter–13: Kinetic Theory Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number	1.Heat, internal energy and work 2.first law of thermodynamics 3.Equation of state and thermodynamic process 1.Behaviour of gases 2.Kinetic theory of an ideal gas 3.Law of equi-partition of energy 4.Specific heat capacity 5.Mean free path 6.Mole concept
DECEMBER 2020		WINTER BREAK	
JUANARY 2021	Unit 10: Oscillations and Waves	Deleted Topics: Fundamental mode and harmonics and Doppler effect Chapter–14: Oscillations Periodic motion - time period, frequency, displacement as a function of time, Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of	1.Simple harmonic motion 2.Total energy in SHM 3.Undamped and damped oscillation 4.Wave function

		<p>expression for its time period. Free, forced and damped oscillations (qualitative ideas only), resonance.</p> <p>Chapter–15: Waves Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes,</p>	<p>5. Transverse waves 6. Ultrasonics and infrasonic 7. Speed of waves in a medium</p> <p>1. Parts of a transverse wave 2. Longitudinal waves 3. Properties of mechanical waves 4. Superposition principle 5. Formation of stationary waves 6. Vibration of air columns 7. Formation of waves in fixed string fixed 8. Beats 9. Propagation of sound as longitudinal waves</p>
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