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| **Lesson Plan for the Month April 2022 to July 2022**  | **Subject : Physics** |
| **Name of the Teacher** | **Dr. Pawan Kumar** | **Class** | **B.Sc. 2nd Sem** |
| 18-04-2022 To23-04-2022 | Degree of freedom, Constraints and it’s classification, and Generalized coordinates, Principal of virtual work, D’Alembert principal  |
| 25-04-2022 To30-04-2022 | Simple and Compound principal, Atwood machine and Hamiltion’s principal and derivation of Lagrange’s from Hamilton’s equation, and Lagrange’s equation of D’Alembert principal |
| 02-05-2022 To07-05-2022 | Refrences systems, Inertial frames, Gallilean invariance and Conservation laws |
| 09-05-2022 To14-05-2022 | Newtonian relativity principal, Michelson-Morley experiment and its outcome,Theory of relativity: Constancy of speed of light |
| 16-05-2022 To21-05-2022 | Postulates of spetial theory of relativity, Lorentz transformation and Length contraction and time dilation |
| 23-05-2022 To28-05-2022 | Relativistic velocity addition theorem, variation of mass with velocityand mass energy equivalence  |
| 30-05-2022 To04-06-2022 | Relativistic doppler effect, Relativistic Kinematics, and Assignment-1st |
| 05-06-2022 To12-06-2022 | **Break** |
| 13-06-2022 To18-06-2022 | Transformation of energy and momentum, Elasticity: Hook’s law and stress-strain diagram, Elastic moduli: Relation between elastic constants |
| 20-06-2022 To25-06-2022 | Poisson’s ratio: expression for poission’s ratio in terms of elastic constants and Work done in stretcheing and work done in twisting a wire- Twisting couple on a cylinder |
| 27-06-2022 To02-07-2022 | Determination of rigidity modulus by static torsion-Torsional pendulum, and Assignment-2nd |
| 04-07-2022 To09-07-2022 | Determination of rigidity modulus and momemt of inertia, Searles method, and Unit test |

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| **Lesson Plan for the Month April 2022 to July 2022**  | **Subject : Physics** |
| **Name of the Teacher** | **Dr. Pawan Kumar** | **Class** | **B.Sc. 6th Sem** |
| 09-04-2022 To16-04-2022 | Crystalline and gallssy forms, liquid crystals, Crystal structure and periodicity, lattice and basis |
| 18-04-2022 To23-04-2022 | crystal translational vectors and axes, Unit cell and primitive cell, Winger Seitz and primitive Cell |
| 25-04-2022 To30-04-2022 | Symmetry operations for a two dimensional crystal, Bravais tattices in two and three dimensions. |
| 02-05-2022 To07-05-2022 | Crystal planes and Miller indices, Interplanner spacing, Crystal structures of Zinc sulphide, |
| 09-05-2022 To14-05-2022 | Sodium Chloride and diamond, X-ray diffraction, Bragg's Law and experimental x-ray diffraction methods |
| 16-05-2022 To21-05-2022 | K-space, Reciprocal lattice and its physical significance, reciprocal lattice vectors, reciprocal lattice to a simple cubic lattice, b.c.c and f.c.c |
| 23-05-2022 To28-05-2022 | Specific heat : Specific heat of solids, Einstein's theory of specific heat, Debye model of specific heat of solids and Assignment 1st |
| 30-05-2022 To04-06-2022 | Failure of (Classical) E.M. Theory, quantum theory of radiation (old quantum theory), Photon, Photoelectric effect and Einstein’s photoelectric equation compton effect (theory and result). |
| 05-06-2022 To12-06-2022 | **Break** |
| 13-06-2022 To18-06-2022 | Inadequancy of old quantum theory and de-Broglie hypothesis, Davisson and Germer experiment, G.P. Thomson experiment. Phase velocity group velocity, Heisenberg's uncertainty principle, Time-energy and angular momentum, position uncertainty Uncertainty principle from de-Broglie wave, (wave-partice duality). |
| 20-06-2022 To25-06-2022 | Gamma Ray Maciroscope, Electron diffraction from a slit, Derivation of time dependent Schrodinger wave equation, eigen values, eigen functions, wave functions and its significance. Normalization of wave function, concept of observable and operator. |
| 27-06-2022 To02-07-2022 | Solution of Schrodinger equation for harmomic oscillator ground states and excited states, Application of Schrodinger equation in the solution of the following one-dimensional problems: Free particle in one dimensional box (solution of schrodinger wave equation, eigen function, eigen values, quantization of energy and momentum, nodes and antinodes, zero point energy), and Assignment 2nd |
| 04-07-2022 To09-07-2022 | i) One-dimensional potential barrie E>V0 (Reflection and Transmission coefficient. ii) One-dimensional potential barrier, E>V0 (Reflection Coefficient, penetration of leakage coefficient, penetration depth) and Unit Test |