**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Odd Semester (UG 1st Year)**

**Session (2021-2022)**

**Class: \*B.Sc 1st /\*\*BTH 1st**  **Name of the Teacher: Rajwinder Singh**

**Subject: Physics Period : 1st /3rd (B.Sc 1st), 4th (BTH 1st )**

**Paper :C Room No : 129**

|  |  |  |
| --- | --- | --- |
| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 1-09-2021 to 04-09-2019 | Admissions ( 1st September to 10th September 2021) |
| Week 2 | 06-09-2021 to 11-09-2021 | Admissions |
| Week 3 | 13-09-2021 to 18-09-2021 | \*Basic ideas of Vector Calculus , Gradient, Divergence, curl in Cartesian coordinates and their useful relations  \*\*Coulomb’s law for point charges; electric field due to point charge |
| Week 4 | 20-09-2021 to 25-09-2021 | \*physical significance of Gradient, Divergence, curl and applications, Conservative field, Greens’s theorem in a plane  \*\*Electric field due to electric dipole (on axial line and equator line) |
| Week 5 | 27-09-2021 to 01-10-2021 | \*Stoke’s theorem, Gauss’s divergence theorem, Laplacian in Rectangular coordinates  \*\*Electric flux; Gauss’s theorem and its applications (line of charge and sheet of charge) |
| Week 6 | 04-10-2021 to 09-10-2021 | \*Coulomb’s Law for point charges and continuous distribution of charges  \*\*Electric potential due to point charge, group of charges and dipole (on axial line and equatorial line ), potential difference as line integral of electric field |
| Week 7 | 11-10-2021 to 16-10-2021 | \*Electric field due to dipole, line charge, charged ring, circular disc and sheet of charge  \*\*Capacitance; series and parallel arrangements, energy stored in the electric field of capacitor |
| Week 8 | 18-10-2021 to 19-10-2021 | \*Gauss’s Law and its differential form, Work and potential difference, Potential difference as line integral of field, Gauss’s law for dielectrics.  \*\*current, current density, equation of continuity, Ohm’s law in vector form |
| **Mid Semester Exam (21st October 2021 – 30th October 2021)** | | |
| Week 9 | 01-11-2021 to 06-11-2021 | \*Electric potential due to dipole and quadrupole and its applications in Electrostatic field  \*\*Quantum theory of light, X-rays diffraction |
| Week 10 | 08-11-2021 to 13-11-2021 | \*Electric potential due to dipole and quadrupole and its applications in Electrostatic field contd., Electric field as gradient of scalar potential, curl E = 0  \*\*Compton effect, Bragg’s law |
| Week 11 | 15-11-2021 to 20-11-2021 | \*Calculation of E due to a point charge and dipole from potential. Poisson and Laplace’s equation  \*\*De Broglie wave equation, phase velocity and group velocity |
| Week 12 | 22-11-2021 to 27-11-2021 | \*Calculation of electric potential and field due to a point charge placed near an infinitely conducting sheet  \*\*Electron microscope, Uncertainty Principle (statement only) |
| Week 13 | 29-11-2021 to 04-12-2021 | \*Polarisation of matter, atomic and molecular dipoles, induced dipole moment and atomic polarizability  \*\*Applications of Uncertainty Principle ( particle in a box, existence of electron in Nucleus and atom ) |
| Week 14 | 06-12-2021 to 11-12-2021 | \*Concept of electrical images Electric susceptibility and polarization vector. Relation K= 1 + χ  \*\*Radioactivity and its laws |
| Week 15 | 13-12-2021 to 16-12-2021 | \*Gauss’s law for dielectrics. Displacement vector, Div. D = 0, Energy stored in dielectric medium  \*\*Half-life and mean life, uses of radioactivity |