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

**Teaching Plan Session Odd Semester**

**(2017-18)**

**Class: B.Sc.Ist /Ist (Biotech) Name of the Teacher: JYOTI**

**Subject: Electricity & Magnetism/Physics Period : IIIrd,Vth**

**Paper : C/Sem-I Room No : 221/111**

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| **S. No** | **Date From** | **Date Upto** | | **Topics to be covered** |
| Week 1 | July 22 & July 24 2017 | July 29, 2017 | |  |
| Week 2 | July 31 2017 | Aug 5, 2017 | |  |
| Week 3 | Aug 7, 2017 | Aug 12, 2017 | | Scalar and vectors,vector notation,addition and product of vectors,vector representation of area,Scalar & dot product and their properties.  Scalars & vectors,Unit vector, vector algebra,Laws of vector addition,Scalar & dot product and their proprties. |
| Week 4 | Aug 14, 2017 | Aug 19, 2017 | | Scalar & vector triple product,scalar & vector quadrupole product,Vector representation of line, plane & sphere.  Scalar & vector triple product,Scalar & vector Quadrupole product. |
| Week 5 | Aug 21, 2017 | Aug 26, 2017 | | Scalar & vector field,Derivatrive of a vector,Del operator, Integration of vectors, Flux,Divergence of a vector field and its expression in terms of cartesian coordinates  Vector equation of line,plane & sphere,Vector calculus: Divergence & curl of vector field. |
| Week 6 | Aug 28, 2017 | Sept 2, 2017 | | Gauss divergence theorem,curl of a vector field & its expression in terms of cartesian components,Stoke’s theorem  Gradient of a scalar field and some identities of vector calculus.Physical quantities,Units(History & types) |
| Week 7 | Sept 4, 2017 | Sept 9, 2017 | | Gradient of a scalar field & its expression in terms of cartesian components,Green’s Theorem,Types of vector fields and their properties,Spherical & cylinderical coordinates  Units of measurement and ranges for fundamental physical quantities.System of units. |
| Week 8 | Sept 11, 2017 | Sept 16, 2017 | | Coloumb’s force law,Force experienced by test charge,Electric field,Superposition of electric fields,Electric field due to dipole(on axial & equatorial line)  Coulomb’s law for point charges, electric field due to point charge |
| Week 9 | Sept 18, 2017 | Sept 23, 2017 | | Electric field due to linear distribution of charge,sgheet of charge and uniformly charged circuylar ring, Solid angle,Electric lines of force,Flux,Gauss law 7 its differential form.  Electric field due to dipole (on axial line and equator line) |
| Week 10 | Sept 25, 2017 | Sept 29, 2017 | | Application of Gauss law(linear charge,infinite plane sheet of charge,spherical distribution of charge),Coloumb law from Gauss law.  Electric flux,Gauss theorem & its applications(line of charge and sheet of charge) |
| **Autumn Break (30 Sept 2017- 09 Oct 2017)**  **Mid Semester Exam (10 Oct 2017 – 17 Oct 2017)** | | | | |
| Week 11 | Oct 18, 2017 | | Oct 21, 2017 | Work & Potential difference, Potential difference as line integral of electric field, Electric potential due to dipole & its application in electrostatic field.  Electric Potential due to point charge & group of charges,Potential difference as line integral of electric field |
| Week 12 | Oct 23, 2017 | | Oct 28, 2017 | Electric potential due to quadrupole & its application in electrostatic field.  Electric field as a gradient of scalar potential, curl E=0,  Electric Potential due to dipole on axial line |
| Week 13 | Oct 30, 2017 | | Nov 4, 2017 | Calculation of E due to a point charge and dipole from potential, Poisson & Laplace’s equation, Concept of electrical images  Electric potential due to dipole on equatorial line |
| Week 14 | Nov 6, 2017 | | Nov 11, 2017 | Calculation of electric potential and field due to a point charge placed near an infinitely conducting sheet.  Capacitance,Series & parallel arrangements,Energy stored in the electric field of capacitor |
| Week 15 | Nov 13, 2017 | | Nov 18, 2017 | Polarisation of matter,atomic & molecular dipoles, induced dipole moment & atomic polarizability  Current,Current density |
| Week 16 | Nov 20, 2017 | | Nov 25, 2017 | Electric susceptibility & polarisation vector, relation K=1+χ ,  Equation of continuity |
| Week 17 | Nov 27, 2017 | | Dec 1, 2017 | Gauss’s law for dielectrics, Displacement vector,Div.D=0, Energy stored in dielecric medium  Ohm’s law and its vector form |