**GOVT. COLLEGE BAROTA**

**LESSON PLAN OF MATHEMATICS(2023-24)(ODD SEM.)**

**B.A./B.SC. (3rd SEM.)**

**ADVANCED CALCULUS**

|  |  |  |
| --- | --- | --- |
| **MONTH** | **WEEK** | **SYLLABUS** |
| JULY | WEEK 1 | Indeterminate forms. |
| AUGUST | WEEK 1 | Indeterminate forms ctd., Limit and continuity of real valued functions of two variables. |
| WEEK 2 | Test, Partial differentiation, Homogenous functions & Euler’s theorem on homogeneous functions. |
| WEEK 3 | Composite functions & implicit functions, Change of variables, Taylor’s theorem for functions of two variables. |
| WEEK 4 | Test, Assignment, Differentiability of real valued functions of two variables, Schwarz Thm. |
| WEEK 5 | Young’s theorem. Implicit function theorem. Maxima, Minima and saddle points of two variables. |
| SEPTEMBER | WEEK 1 | Maxima, Minima and saddle points of two variables ctd. |
| WEEK 2 | Lagrange’s method of multipliers, Test, Continuity, Sequential Continuity. |
| WEEK 3 | Properties of continuous functions, Uniform continuity, chain rule of differentiability. |
| WEEK 4 | Mean value theorems, Rolle’s Theorem, Lagrange’s mean value theorem and their geometrical interpretations. |
| OCTOBER | WEEK 1 | Taylor’s Theorem with various forms of remainders, Darboux intermediate value theorem for derivatives. |
| WEEK 2 | Assignment, Curves: Tangents, Principal normals, Binormals, Serret-Frenet formulae. |
| WEEK 3 | Locus of the centre of curvature, Spherical curvature, Locus of centre of Spherical curvature. |
| WEEK 4 | Involutes, evolutes, Bertrand Curves. |
| NOVEMBER | WEEK 1 | Surfaces: Tangent planes, one parameter family of surfaces. |
| WEEK 2 | Envelopes, Test |
| WEEK 3 | Revision |