**SRI RAMAKRISHNA MISSION VIDYALAYA COLLEGE OF ARTS**

**AND SCIENCE (AUTONOMOUS) COIMBATORE – 641 020.**

**For candidates admitted from academic year 2013-2014 onwards**

**Under New CBCS**

**Programme : B.Sc., Mathematics.**

**Course Title : Core 3: DIFFERENTIAL EQUATIONS**

 **AND LAPLACE TRANSFORMS Subject Code : 2C03**

**Year : First Year Semester : II**

**Hours/Week : 5 Credits : 4**

**Unit –I**

**DIFFERENTIAL EQUATIONS :**  Differential Equations of Non homogeneous equations - Bernoulli’s equation. Differential Equations of the first order, but of the higher degree - Equations solvable for dy/dx – Equations solvable for y- Equations solvable for x- Clairaut’s form.

 **Vol III: Chapter 1 section 2.1 to 2.5,5.1 to 6.1**

**Unit –II**

**DIFFERENTIAL EQUATIONS (** cont.**) :** Linear differential equations with constant coefficients – special methods of finding particular integral – Linear equations with variable coefficients – Equations reducible to the linear homogeneous equations – Variation of parameters.

**Vol III: Chapter 2 sections 2 to 4, 8 to 10**

**Unit – III**

**DIFFERENTIAL EQUATIONS (** cont.**) :**  Simultaneous equations of the first order and first degree – Methods for solving dx/P=dy/Q=dz/R simultaneous linear differential equations with constant coefficients.

**VOL III : Chapter 3 sections 1 to 6**

**Unit -IV**

**PARTIAL DIFFERENTIAL EQUATIONS:** Derivation of partial differential equations by elimination of arbitrary constants and arbitrary functions – Different integrals of partial differential equations - standard types of first order equations - Lagrange’s equations.

 **Vol III: Chapter 4 ,Omit section 4, 5.5 and 7.0**

**Unit –V**

**LAPLACE TRANSFORMS:** Laplace transforms – Definition – Transform of f(t), - expat, Cos at, Sin at and t n when n is an integer – Laplace transforms to solve ordinary differential equations with constant co-efficient.

**Vol III Chapter 5**

**TEXT BOOK**:

**Calculus Vol III by T.K.Manicavachagam Pillay , S.Narayanan,** S.Viswanathan Printers, 2007.