**SRI RAMAKRISHNA MISSION VIDYALAYA COLLEGE OF ARTS**

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

**For candidates admitted from academic year 2015-2016 onwards**

**Under New CBCS**

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

**Course Title : Core 1: ALGEBRA Subject Code : 15UMA1C01**

**Year : First Year Semester : I**

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

**Unit -I**

**CONVERGENCY AND DIVERGENCY OF SERIES:** Infinite series – Geometric series – some general theorems concerning infinite series- The series is convergent when k is greater than unity and divergent when k equal to or less than unity – Cauchy’s condensation test- D’Alembert’s Ratio test – Cauchy’s Root test – Raabe’s test.

 **Chapter 2: Sections 8 to 19**

**Unit-II**

**Binomial Theorem:** Binomial theorem for rational index – Application of the Binomial theorem to the summation of series – Approximate values.

**Chapter 3 Sections: 5 - 10 and 14**

**Unit –III**

**Exponential and Logarithmic Series:** The Exponential theorem – Summation - The Logarithmic series – Euler’s constant – summation – The application of the exponential and logarithmic series to limits and approximations.

**Chapter 4 Sections:1 - 11**

**Unit –IV**

**THEORY OF EQUATIONS:** Roots of an equation – Relations between the roots and co-efficient of equations – Symmetric functions of the roots – Transformation of equations – Reciprocal equations

**Chapter 6.Sections:1 to 12, 15 & 16**

**Unit -V**

**THEORY OF EQUATIONS (Cont.):** To increase or decrease the roots of a given equation by a given quantity – Removal of terms – Descartes’ Rule of signs - Roll’s theorem – Multiple roots – Horner’s method of approximation.

 **Chapter 6 Sections: 17, 19, 24 - 26 and 30. (Omit section 30.1)**

**TEXT BOOK**:

**Algebra, Vol. I by Manickavachagam Pillay, T.Natarajan, K.S.Ganapathy** S.Viswanathan Pvt. Ltd (2007).