FYUGP Syllabus: Mathematics
Multidisciplinary Course (MDC)

End Semester Exam: Full Marks – 75. (Pass Marks – 30)	Credits - 03 No. of Lecturer - 45

General Instructions

There will be two groups of questions. Group – A will be compulsory and contain two questions, Question No. 1. contains very short answer type five questions throughout the Syllabus of 01 mark each whereas Question No. 2. contains two questions throughout the Syllabus of five marks each. Group – B will contain descriptive answer type six questions of fifteen marks each, out of which four are to be answered.

Year/ Semester	Paper Title & Study Materials
(Multidisciplinary Course)	**Unit-I** Matrix: types of matrices, Transpose and conjugate of a matrix, Adjoint and inverse of a matrices and its properties, Orthogonal, Unitary matrices. (2 Questions) **Unit-II** Trigonometry: De Moivre's theorem and its applications. Logarithm of complex quantities, Gregory's Series, Hyperbolic function, Summation of trigonometrical functions, Expansion of $\cos n\theta$ and $\sin n\theta$. (2 Questions) Unit-III Successive differentiation, Leibnitz theorem and its applications. Expansion of functions in series, Taylor's Theorem, Maclaurin's Theorem, and their applications. Integration by partial fraction, Integration of irrational functions, Integration as process of summations, General properties of definite integrals. (2 Questions) **Reference & Text books:** 1. Lalji Prasad, Calculus and Vector Calculus, Paramount publication. 2. Ghosh, R K, and Maity, K C, An Introduction to Analysis: Differential Calculus: Part I, New Central Book Agency. 3. Ghosh, R K, and Maity, K C, An Introduction to Analysis: Integral Calculus, New Central Book Agency.

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