SYLLABUS

ADVANCED CALCULUS–II

(SEMESTER-IV)
(P.U.)

Time : 3 Hours   Max. Marks : 30

Internal Assessment : 4 Marks

Note : 1. The syllabus has been split into two Units : Unit-I and Unit-II. Four questions will be set from each Unit.

2. A student will attempt five questions selecting at least two questions from each Unit. Each question will carry 6 marks.

UNIT-I

Definition of a sequence, Bounds of a sequence, Convergent, divergent and oscillatory sequences, Algebra of limits, Monotonic Sequences, Cauchy's theorem on limits, Subsequences, Bolzano-Weirstrass Theorem, Cauchy's convergence criterion.

Sequential continuity and Uniform continuity of functions of single variable.

UNIT-II

Series of non-negative terms, P-Test, Comparison tests, Cauchy's integral test, Cauchy's Root test, Ratio tests, Kummer's Test, D'Alembert's test, Raabe's test, De Morgan and Bertrand's test, Gauss test, Logarithmic test, Alternating series, Leibnitz's theorem, Absolute and conditional convergence, Rearrangement of absolutely convergent series, Riemann's rearrangement theorem.