

**SARDAR PATEL UNIVERSITY**  
**Programme & Subject: B.Sc (Mathematics)**  
**Semester: III**  
**Syllabus with Effect from: June-2012**

<b>Paper Code: US03CMTH03</b>	<b>Total Credit: 3</b>
<b>Title Of Paper: Practical</b>	

	<b>Description in detail</b>	
1	Inherent Errors and truncated errors ; Errors in a series approximation.	
2	Interpolation :- Newton's forward and backward, Gauss's forward and Backward, Sterling's, Bessel's, Everett's, Lagrange's , Newton's General and Lagrange's general formulae , Method of successive approximations , Numerical differentiation and integration :- differentiation of Newton's forward and backward , Stirling's , Bessel's , Newton's General and Lagrange's formulae; Trapezoidal, Simpson's (1/3) rd and (3/8) <sup>th</sup> rules, Romberg method.	
3	Solution of algebraic and transcendental equations : Bisection method, Iteration method, Aitken's $\epsilon^2$ process, method of false position, Newton Raphson's method ; Numerical solution of ordinary differential equations :- Solution by Taylor's series, Picard's method, Euler's Method, Modified Euler's method ; Runge-kutta method (fourth order only).	
4	Boolean algebra and Switching circuits.	

**Notes:**

- Use of the standard texts books may be permitted at the time of Practical Examination.
- The candidate shall have to produce at the time practical Examination the record of their prescribed Laboratory work, credited by the Head of the Department.

**Basic Text & Reference Books:-**

- S.S.Sastry, Introductory methods of Numerical analysis, Prentice Hall Of India, 1990.
- Scarborough, Numerical Mathematical Analysis
- Bajpai, calculus and farly, Numerical Analysis for scientists and Engineers, John Wiley.
- J.E.Whitesitt , Boolean Algebra .

