

**5BCA4(B) – NUMERICAL METHODS**

**UNIT-I**

Representation of a computer on a computer, difference between floating point and real arithmetics, different types of errors, Error in the approximation of a function, Error in series approximation.

**UNIT-II**

Solution of algebraic and transcendental equation using bisection method, regular false method, newton raphson method.

Solution of simultaneous linear equations using gauss elimination method, jacobi's iterative method, gauss seidel iterative method.

**UNIT-III**

Interpolation: finite difference and operators, newton forward, newton backward, games forward, games backward, stirling's interpolation divided difference formula

**UNIT-IV**

Numerical differentiation, formula for derivatives maxima and minima of a tabulated  
Numerical integration: newton-cotes formula, trapezoidal rule, simpson's rule, weddle's rule.

**UNIT-V**

Solution of ordinary differential equation using picard's method, Taylor's series method, Euler's method, modified Euler's method, Runge-Kutta method, predictor-corrector method.

**Text & Reference Books :**

1. Numerical methods in engg & science -b.s.gawal
2. Numerical method -s.s sastry