Bachelor of Computer Applications 3rd Semester

Computer Oriented Numerical Methods

Time allowed: 3 Hours | Max. Marks: 65

***Note*:** Attempt One question each from Sections (A to D). Question 9 (Section E) is compulsory. All questions carry equal marks.

SECTION-A

(I) What is floating point number? Describe the storage of floating point number. (13)

(II) What do you mean by error? Explain different types of errors in detail. (13)

SECTION-B

(III) What is the difference between direct method and iterative method to find solution of non-linear equations? Explain with suitable examples. (13)

(IV) What do you mean by Newton Raphson method? Explain with a suitable example. (13)

SECTION-C

(V) What is interpolation? Explain Newton's forward difference interpolation formula. (13)

(VI) Broadly, explain the use of Newton's divided difference interpolation formula. (13)

SECTION-D

(VII) Define approximation. Explain Chebyshev polynomials in detail. (13)

(VIII) How can you solve differential equations using Runga-Kutta method? (13)

SECTION-E

(IX) Write short notes on the following:

(i) Euler's method (3)

(ii) Lagrange interpolation (2)

(iii) Gauss-Seidal method (2)

(iv) Birge-Vieta method (2)

(v) Absolute error (2)

(vi) Transcendental equations. (2)