BA224 : Numerical Analysis (SEC)

Time Allowed: 3hrs

External Exam: 70(50theory+20 viva)
Internal Assessment: 30
Total: 100

Course Outcomes:

CO1 To develop skills to solve mathematical problems using numerical methods.
CO2 Student will be able to use numerical techniques to find roots of non linear equations.
CO3 Student will be able to analyse and estimate the errors in numerical solutions.
CO4 Will develop critical thinking skills to choose appropriate numerical method
COS Will use C/C++ Language to write and perform programs of Numerical Methods

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of two sections: Section A and B will have eight questions from entire syllabus with each question carrying 10 marks. Section C will be compulsory with 5 short-answer type questions of 02 marks each which will cover the entire Syllabus.

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INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt any four questions from both sections A and B and compulsory question of Section C

Section A

Propagation of error. Numerical cancellation and computation of functions. Arithmetic Expressions. Numbers, operations and elementary functions.

Section B

Numerical stability, and interval arithmetic. Linear and Non-linear equations: Bisection method. Regula falsi method, Secant method, Newton Raphson method.

References

1. Arnold Neumaier: Introduction to Numerical Analysis, Cambridge University Press, 2001.

2. Carl Erik Froberg: Introduction to Numerical Analysis, 2nd Edition. Addison Wesley Publishing Company, 1969.

3. Elements of Numerical Analysis: R.S. Gupta, Macmillan India Limited, 2009.