



Code No. : **301**

FACULTY OF SCIENCE
M.Sc. I Semester Examination, November/December 2012
PHYSICS AND APPLIED ELECTRONICS
Paper – IV (104) : C-Programming and Numerical Methods

Time : 3 Hours]

[Max. Marks : 80

Instruction : Answer all questions.

SECTION – A

(8×4=32 Marks)

1. Distinguish between key words and identifiers.
2. Explain the syntax of do ... while statement.
3. Give the syntax of declaration and initialization of two dimensional arrays.
4. What is an array variable ? Explain.
5. Explain the bisection method of finding roots of an equation.
6. Give an algorithm for Secant Method.
7. What is interpolation ?
8. Explain the Euler's method of solving differential equations.

SECTION – B

(4×12=48 Marks)

9. a) Write about various data types in 'C'.

OR

- b) Explain the syntax of different statements used for looping in C. Explain the syntax of switch ... case statement with an example.



10. a) What is a bubble sort ? Write an algorithm for bubble sorting a given one dimensional array.

OR

b) What is the difference between array of pointers and pointers to an array ? Distinguish between call by value and call by reference.

11. a) Give an algorithm for Gauss Seidel method of solution of algebraic equations.

OR

b) Give the Newton-Raphson method of solution of an equation. Solve $f(x) = x^2 - x - 6$ using Newton-Raphson method.

12. a) Explain the Trapezoidal Rule. Integrate $f(x) = x^2$ in the limits -1 to 1 using Trapezoidal rule.

OR

b) Explain the Runge-Kutta IV order method of solving differential equations. Compare it with II order Runge-Kutta method.