

Code No. 3527 / CBCS / Non-CBCS

FACULTY OF SCIENCE

M.Sc. I - Semester (CBCS/Non-CBCS) Examination, December 2014

Subject: Physics / Applied Electronics

Paper – IV: Computer Programming in C & MATLAB

Time: 3 hours

Max. Marks: 80

Note: Answer all questions from Part - A and Part - B.
Each question carries 4 marks in Part - A and 12 marks in Part - B.

PART – A (8 x 4 = 32 Marks)

(Short Answer Type)

- 1 Differentiate between break and continue statements in C language.
- 2 Define local and global variable with example.
- 3 Distinguish between function declaration and definition.
- 4 Explain about pointer variables.
- 5 What is secant method of solving an equation?
- 6 Explain about method of false position.
- 7 Explain Lagrange forward interpolation formula.
- 8 Explain Euler's method of solving differential equations.

PART – B (4 x 12 = 48 Marks)

(Essay Answer Type)

- 9 a) Write a program to sum the elements of a given matrix using recursion technique.
OR
b) Write the syntax of conditional statement *IF* and *while* with examples.
- 10 a) Define function and explain about the following categories of functions.
 - i) Functions with arguments and return values
 - ii) Function with argument and no return values
 - iii) Functions with no argument and no return values**OR**
b) Differentiate between linear search and binary search and its complexity with suitable example.
- 11 a) Find a root of the equation $x \sin x + \cos x = 0$. Using Newton Raphson method.
OR
b) Compare critically Gauss-elimination and Gauss-Jordon methods of solving simultaneous equations.
- 12 a) The table below gives square roots for integers.

x	1	2	3	4	5
f(x)	1	1.4142	1.7321	2	2.2361

Find the square root of 2.5 using the second order Lagrange interpolation method.

OR

- b) Evaluate $I = \int_0^1 \frac{1}{1+x} dx$ correct to three decimal places. Using trapezoidal and Simpson Rules.
