

# COMPUTER PROGRAMMING AND NUMERICAL METHODS – 2011

Answer any FIVE questions.

First question is compulsory.

All questions carry equal marks

1. (a) What is the difference between the constants '7' and "7" ?  
(b) How is a pointer variable different from an ordinary variable ?  
(c) What is union in C programming ?  
(d) Explain character array.  
(e) Explain file handling functions.  
(f) Explain what is parameters in 'C' function.  
(g) Explain representation for characters in 'C'.
2. (a) Discuss in detail different control structures in C language.  
(b) Give different data types and also their sizes in C language.
3. Explain in detail about different parameter passing mechanisms in C language with programs.
4. (a) Explain the two dimensional array initialization with example program.  
(b) How does an array differ from an ordinary variable ?
5. (a) Explain array of strings with program.  
(b) Write a program to find the length of string.
6. (a) How is a structures different from unions ?  
(b) Explain Structures and functions & Structures and pointers.
7. (a) Explain Algorithms and Flowcharts with example.  
(b) Using Gauss-Jordan method, Solve :  
$$x + y + z = 12, 3x + 2y - 4z = 15. 4x + 2y + 5z = 52.$$
8. (a) Use Runge-Kutta method to solve the following equation  $10 \frac{dy}{dx} = x^2 + y^2, y(0) = 1$  for the interval  $0 \leq x \leq 4$  with  $h = 0.1$ .