



Reg. No. :

Name :

**Sixth Semester B.Tech. Degree Examination, June 2017
(2013 Scheme)**

13.604 : NUMERICAL TECHNIQUES AND COMPUTER PROGRAMMING (E)

Time : 3 Hours

Max. Marks : 100

PART – A

I. Answer **all** questions.

- 1) What is conditional operator ? Give its syntax and explain with the help of an example.
- 2) Write notes on identifiers and keywords.
- 3) Explain the use of break continue with an example.
- 4) Explain trapezoidal rule with an example.
- 5) Write a C program to find factorial of n numbers using recursion.
- 6) Write down the advantage of programming using pointers.
- 7) What is meant by formatted files in C language ?
- 8) Explain the difference between Gauss and Gauss Jordan elimination method.
- 9) Write an algorithm for finding the root of transcendental equation by bisection method.
- 10) Draw a flowchart to solve first order differential equation by Euler's method.

(2×10=20 Marks)

PART – B

Module – I

- II. a) Write a C program to find the sum of n terms of sine series. 12
- b) Explain with examples the input-output functions used in C. 8

OR

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- III. a) Write a C program to find second largest element in an array. 12
b) What are the major difference between structure and union ? 8

Module – II

- IV. a) Explain various storage classes in C. 10
b) Write a C program to reverse a given string and use it to check whether the given string is a palindrome. 10

OR

- V. a) Differentiate between call by reference and call by value. Explain with example. 10
b) Write a C program to find the maximum number of an array using pointer. 10

Module – III

- VI. a) Write a C program to solve the simultaneous equations using Gauss elimination method. 12
b) Write a C program to find the root correct to 3 decimal places of the equation $\log x - x + 3 = 0$. 8

OR

- VII. a) Write a C program to find the root of following equation using Bisection method $x^2 - \cos(x) = 0$. 10
b) Write a C program to obtain the determinant of a matrix. 10

Module – IV

- VIII. a) Explain the algorithm for Simpsons 1/3rd rule. 10
b) Using trapezoidal rule write a C program to evaluate the integral of $\int_4^{5.2} \log x dx$. 10

OR

- IX. a) Develop an algorithm for solving partial differential equation using Runge-Kutta method. 10
b) Explain the algorithm and write a C program for solving differential equation by Euler's method. 10
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