Reg. No. : ....

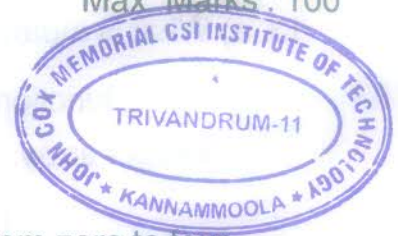Name : ....

Sixth Semester B.Tech. Degree Examination, March 2015

(2008 Scheme)

08.603 : NUMERICAL TECHNIQUES AND COMPUTER PROGRAMMING (E)

(Special Supplementary)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **All** questions carry **4** marks **each**.

1. Name and describe four basic types of constants in C ?

2. Write a 'C' program to evaluate e^x for integer powers of x from zero to four.

3. Differentiate between Structure and Union.

4. With the help of an example explain what is meant by pointer to function.

5. What is meant by command line argument ?

6. Write a C program to swap two numbers using pointers and functions.

7. Write an algorithm to insert an element in a Queue.

8. Write a 'C' program to find root of an equation using Newton Raphson method.

9. Write a program to evaluate $\int_a^b \dfrac{dx}{(1+x^2)}$ using trapezoidal rule.

10. Define Eigen values and Eigen vectors.

(10×4= 40 Marks)

PART – B

Answer **any one** question from **each** Module. **Each** question carries **20** marks.

Module – I

11. a) Write a 'C' program to delete the duplicate elements in an integer array.
   (**Note** : Use a single array).   10

   b) Write a C program to read in elements of a 3 × 3 matrix and find the greatest
   of the leading diagonal elements.   10

OR

12. a) Write a C program which prompts the user to enter strings and sort them in alphabetical order. **10**

    b) Define a structure that can store the details of an employee. It should have members such as employee name, date of birth (DD/MM/YY) and salary. Write a C program to store employee details and display them in the order of their salary. **10**

Module – II

13. a) What is meant by dynamic memory allocation ? Explain its benefits. **8**

    b) Using functions and pointers write a C program to reverse the elements of an integer array. **12**

OR

14. a) Write about various file handling functions in 'C'. **8**

    b) Write a 'C' program to create a file and store characters in the file. Also display the count of characters in the file. **12**

Module – III

15. a) Write a C program to find the solution of linear equations using Gauss elimination method. **10**

    b) Write a program to find the determinant of a matrix. **10**

OR

16. Write a C program to solve differential equation using Euler's method and Rungakutta method and compare their result. **20**

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