TCS-101   1404

Odd Semester Examination, 2017-18

B.TECH. (SEMESTER-I)

COMPUTER FUNDAMENTALS AND PROGRAMMING

Time: 03:00 Hours   Max Marks : 100

Note : (1)   Attempt **any Five** questions.

       (2)   **All** questions carry **equal** marks.

1.   Attempt **any four** parts of the following :   [5x4=20]

     (a)   What do you mean by a Computer? Distinguish between system and application software.

     (b)   What is a translator? What are the difference between a compiler and an interpreter?

     (c)   What do you mean by the structured programming? State the properties of structured programming.

     (d)   Define an algorithm. Write an algorithm to check whether a year given by the user is a leap year or not.

     (e)   Define the followings :

         (i)   Linking loader and Linkage editor

         (ii)   Storage Classes in C

2.   Attempt **any two** parts of the following :   [10x2=20]

     (a)   Describe the different types of operators that are included in C. What are bit-wise operators? Explain.

     (b)   Differentiate between a for loop and a while loop? Discuss the uses of each with example.

     (c)   What is the purpose of the if-else statement? Write a C program to find the roots of a quadratic equation.

3. Attempt **any Two** parts of the following : [10x2=20]

(a) What is an array? Explain the characteristic of array in C. What is the difference between character array and string?

(b) Demonstrate the storage of two-dimensional arrays in memory with the help of a diagram.

(c) Write a program to rearrange the elements of each row of the matrix such that the elements of each row are arranged in a descending order as shown below :

16	8	7	0	-9
15	5	3	2	-1
6	4	5	-8	-9

4. Attempt **any two** parts of the following : [10x2=20]

(a) Explain call by value and call by reference with the help of suitable examples.

(b) Define the following with example:

(i) the declaration statement and function prototype

(ii) the function definition

(iii) the calling statement

(c) Explain the function. Write function to multiply two n * n matrices.

5. Attempt **any two** parts of the following : [10x2=20]

(a) Explain the features of pointers. Why is the addition of two pointers impossible?

(b) Write short notes on the following:

(i) Array of Pointers

(ii) Pointers to Structure

(iii) Dynamic allocation

(c) Explain the files of C. Write a program in C to create, update and retrieve information from sequential files.

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