

Roll No. ....

Total Pages : 4

**80019**

**Dec., 2018**

**B.Tech., Ist Semester**

**FUNDAMENTALS OF COMPUTER AND  
PROGRAMMING WITH C  
(CE-101C)**

Time : 3 Hours]

[Max. Marks : 75

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

**PART-A**

- (a) Differentiate between Port and a Connector. (1.5)
- (b) Give the full form of the following :  
SMPS, USB, EEPROM and ASCII. (1.5)
- (c) Differentiate between Application software and system software. (1.5)
- (d) Define an Algorithm? What are the desirable features of an algorithm? (1.5)

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[P.T.O.]

(e) What is the output of the following programming code?

```
(i) #include<stdio.h> (ii) #include<stdio.h>
main ()                main ()
{                        {
    Char Ch='A';        int a=5;
    Ch=Ch+10;           printf ("%d",a<10);
    printf("%c",Ch);    getch();
    getch();           }
}                        } (1.5)
```

(f) Differentiate between the following using small programming examples :

getchar ( ) and gets ( ). (1.5)

(g) What do you understand by function prototype? What is its significance? (1.5)

(h) What is meant by memory bleeding? (1.5)

(i) Define a structure. Initialize the member elements of a structure name student with following values.

Name-Rakesh, Age-24, Department-CE and Fee is 34500.50. (1.5)

(j) Define a protocol. Name any *four* protocols. (1.5)

### PART-B

2. (a) What are different functional components of a Computer System? Explain with the help of block diagram of Computer System. (10)

(b) Perform the following conversions:

(i)  $(721)_8 = (?)_{10}$ .

(ii)  $(2605)_{10} = (?)_{16}$ .

(iii)  $(101111100001)_2 = (?)_{16}$ .

(iv)  $(10111011.1101)_2 = (?)_{10}$ .

(v)  $(777)_8 = (?)_{16}$ . (5)

3. (a) Define operating system. What are the tasks performed by OS. (5)

(b) Differentiate between the following :

(i) Assembler, Compiler and Interpreter. (5)

(ii) Multitasking, Multiprogramming, Multiprocessing.

(iii) Problem Oriented Languages & Procedure Oriented Languages. (10)

4. (a) Define an Array. How is it stored in memory? Write a program in C to find out the largest number and its position in a given array. (8)

(b) Define a string. How is it stored in memory? Write a program to that reads a string and counts the number of vowels, words and white spaces present in the string. (7)

5. (a) What is a function. What are different parameter passing techniques. Explain by taking suitable programming example. (8)

(b) What is the difference between recursion and iteration? Write a recursive function to calculate GCD of two numbers say ( M & N ) and call this function in main ( ) program to calculate GCD of 18 & 45.

(7)

6. (a) What is the difference between array and structure? Declare a structure Employee with the following member elements, Emp\_name, Emp\_date of birth, Emp\_dept and Emp\_sal. Declare an array of structure, read and print the data of N such employees. (7.5)

(b) Write a program in 'C' to copy the contents of a file name "Btech.c" to a file name "Mtech.c". (7.5)

7. Write short note on the following :

(a) Scope rule of variables.

(b) Nested Structure.

(c) Pre-processor Directives.

(d) Storage Class specifiers.

(e) Pointers & Array.

(15)