Printed Pages:02 **Sub Code:ECS-201**

Paper Id: | 1 | 1 | 0 | 2 | 0 | 1 | **Roll No.** | | | | | | | | | | |

B TECH

(SEM-II) THEORY EXAMINATION 2017-18

COMPUTER CONCEPTS & PROGRAMMING IN C

Time: 3 Hours ***Total Marks: 70***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14

a. What is the difference between low level and high level language and uses of them?

b. Explain function prototype? Why is it required?

c. Explain pre- and post- decrement and increment operation on a variable with an example.

d. Write the differences between **nested if( )** statement and **switch( )** statement.

e. How does C complier handle the values in an array internally?

f. Describe pointer and dangling pointer.

g. What are the differences between recursion and iteration?

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21

a. What are the steps involved in program development process? Explain.

b. Write a program in 'C' print Fibonacci series using recursion function.

c. Explain Primary data types in C language, mentioning their range, space they occupy in memory and keyword used for their representation in programming.

d. Write a C program to count number of lines, words and characters in a given text without sing any string header files.

e. What do you mean by dynamic memory allocation? Explain the following function in detail.
   (i) Free.
   (ii) Calloc.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7

(a) Draw a flow chart and write an algorithm to find sum and average of 3 numbers.

(b) What is Central Processing Unit (CPU) in a computer? Explain about various components and their functions of CPU.

4. Attempt any *one* part of the following: 7 x 1 = 7

(a) Explain different arithmetic operators available in C language with examples.

(b) Discuss in details about local variables and global variables with respect to their scope and lifetime.

5. Attempt any *one* part of the following: 7 x 1 = 7

(a) Write a C program to check whether the given integer number is palindrome or not.

(b) Explain different parameter passing techniques in functions with examples.

6. Attempt any *one* part of the following: 7 x 1 = 7

(a) Write a C program to add two 2-dimensional arrays.

(b) How do you define a structure, structure variables, access their elements and perform operations on them? Explain with examples.

7. Attempt any *one* part of the following: 7 x 1 = 7

a. Write a program in C for Insertion sort to sort the following numbers in descending order.

12, 23, 12, 2, 43, 60, 54.

b. Explain the following string handling functions with examples:
(i) strcpy( ) (ii) strcat( ) (iii) strrev( ) (iv) strlen