B.TECH.
(SEM 1) THEORY EXAMINATION 2017-18
COMPUTER SYSTEM & 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.   Distinguish between actual arguments and formal arguments with the help of example.

   b.   Explain function declaration and definition of a function with example.

   c.   Draw a flow chart to find the greatest number among three numbers

   d.   Write a function to interchange the two values of two variables without using third variable.

   e.   Differentiate complier and interpreter.

   f.   Why we use do-while loop in c? Also tell any properties which you know?

   g.   #define PRODUCT(n)   n*n
          void main()
          {
           int j;
           j=64/PRODUCT(4);
          printf("%d",j);
          }
          What will be the output of the above program?

SECTION B

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

   a.   What is Operating System? Explain various types of functions performed by an operating system.

   b.   Discuss various data types used in c with suitable examples

   c.   Write a C program to add first seven terms of the following series using for loop.
                  1/1! +2/2! +3/3! +--------

   d.   Define the concept of pointer? Also define the dynamic memory allocation and various functions for dynamic memory allocation, with suitable examples.

   e.   Write a C program to sort set of integers in ascending order by using bubble sort technique.

SECTION C

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

   (a)   Write a program to check the number is palindrome of not. The program should accept any arbitrary number typed by user

   (b)   Write a program to print check a number is prime number or not

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

    (a)   What is recursion? Write a program to print the Fibonacci series using recursion.

    (b)   Explain the difference between parameter passing mechanism call by value and call by reference. Which is more efficient and why?

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

    (a)   Write a program to multiply two matrices (read size and number of element of matrices from the keyboard).

    (b)   Define structure with syntax .Also write a program that compares two given dates. To store date use structure say date that contains three members namely date, month and year. If the dates are equal then display message as "Equal" otherwise "Unequal".

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

    (a)   What are the different file opening modes in C. Write a program to copy the contents of one file into other file?

    (b)   What is Macros? How is it substituted? Also explain macro act as a variable and macro act as a function with the help of example.

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

    (a)   What is digital computer? Draw block diagram of digital computer and explain each components of it

    (b)   What is meant by storage classes of a variable? Define all types of storage classes with example