B.TECH.
THEORY EXAMINATION (SEM–II) 2016-17
COMPUTER SYSTEM AND PROGRAMMING IN C

Time : 3 Hours   *Max. Marks : 100*

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION – A

1.   **Explain the following:**   **10 x 2 = 20**
   (a)   What is meant by modular programming approach?
   (b)   What is operator?
   (c)   What is structured programming approach?
   (d)   What is type conversion?
   (e)   Write a function to interchange the two values of two variables without using third variable.
   (f)   Define function declaration.
   (g)   Enlist different file opening modes in C.
   (h)   What is meant by link list?
   (i)   Write the use of 'switch' statement?
   (j)   Explain various data types?

SECTION – B

2.   **Attempt any five of the following questions:**   **5 x 10 = 50**
   (a)   What is digital computer? Also explain block diagram of digital computer in detail.
   (b)   Write a program that calculate sum of the digits of an integer. For example, the sum of the digit of the number 2155 is 2+1+5+5 or 13.The program should accept any arbitrary number typed by user.
   (c)   Write a program to copy the contents of one array into another in the reverse order.
   (d)   What is Operating System? Also define types and functions of OS.
   (e)   Write a program to multiply two matrices (read size and number of element of matrices from the keyboard).
   (f)   Write a program to sort an integer array in ascending order.
   (g)   What is string? Also explain different string functions. Write a user define function to compare two strings where they are identical or not.
   (h)   Define the concept of pointer? Also define the dynamic memory allocation and its various functions.

SECTION – C

Attempt any two of the following questions: **2 x 15 = 30**
   3   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".
   4   **Write short note on following (Any two)**
      (i)   Stack with push and pop operation
      (ii)   Linked list
      (iii)   Command line argument.
   5   What are the different file opening modes in C. Suppose a file contains student's records with each record containing name and age of a student. Write a C program to read these records and display them in sorted order by name.