Roll No. | | | | | | | |

TCS–201

B. Tech. (Second Semester)
End Semester EXAMINATION, 2017
(All Branches)
PROGRAMMING IN 'C'

Time : Three Hours] [*Maximum Marks : 100*

Note : (i) This question paper contains two Sections.

(ii) Both Sections are compulsory.

Section—A

1. Fill in the blanks/True-False : (1×5=5 Marks)

   (a) Using _____ function, we can write data to file. (Fill in the blank)

   (b) When an array is declared, name of array works as a pointer to base address. (True/False)

   (c) Insertion in and deletion from an array does not involve physical shifting of elements of the arrays. (True/False)

   (d) int a[ ] = {4}; this statement allocates 4 bytes of memory. (True/False)

   (e) By default, return type of any user-defined function is void. (True/False)

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2. Attempt any *five* parts out of seven. (3×5=15 Marks)

(a) Differentiate call by value and call by reference with a programming example.

(b) Differentiate between auto and static storage class through an example.

(c) Explain how to access array through pointer with examples.

(d) Explain fopen( ), fseek( ) and rewind( ) functions.

(e) Write a user define function to implement strupr( ) function.

(f) Write limitations of an array.

(g) A matrix a[33] [42] is used to store integers in a C program. The first element is stored at address 126, calculate the address for a [23] [12].

Section—B

3. Attempt any *two* parts of choice from (a), (b) and (c). (10×2=20 Marks)

(a) Define recursion. Write a program to find a^n, where a is floating number and n can be any positive integer. Define a recursive function power( ) to perform the operation.

(b) Write a 'C' program that will enter a uni of text, store in an array and print the vowels present in the string in the reverse order.

(For example :

INPUT : .....GRAPHIC ERA UNIVERSITY

OUTPUT : .....IEIUAEIA

(c) How is an array passed as an argument to a user-defined function ? Explain with suitable example.

4. Attempt any *two* parts of choice from (a), (b) and (c). (10×2=20 Marks)

(a) What is a structure ? How does a structure differ from a union ? Give examples. For what Kind of applications, union data structure is useful ? How are arrays different from structure ?

(b) Write a 'C' program to find the minimum among the 8 floating point numbers and its place in the array.

(c) Draw a flowchart to remove duplicates from an array of 10 elements. For example, if the input is 6, 7, 2, 7, 5, 1, 1, 5, 8, 2 then output should be 6, 7, 2, 5, 1, 8.

5. Attempt any *two* parts of choice from (a), (b) and (c). (10×2=20 Marks)

(a) Write a program to sort the numbers 1, 6, – 1, 2, 8, 5, 7, 6, 5, 4 in ascending order. Include appropriate documentation.

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(b) Write a program which creates a file named DATA, enter 10 integers in the file and then copy only even numbers into another file named COPY.

(c) Define a structure Time having integer data members hour, minute, second. Write a program to enter two variables of the type Time and then add these two variables and store the result into third variable. Also validate the second and minute of the result and print it.

6. Attempt any *two* parts of choice from (a), (b) and (c). (10×2=20 Marks)

(a) Define an array. How are arrays processed in 'C'. Illustrate by taking two-dimensional arrays as examples.

(b) Write a C program to find the occurrence (single or multiple) of a substring in a given string. The substring and string are entered by the user. Also point out the location at which the substring occurs.

(c) A file has 50 random characters in small letters. Write a program that takes as input a character from user, and calculates the frequency of that character in the file. If the character is not found in the file, print appropriate message.