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15PCD13/23

## First/Second Semester B.E. Degree Examination, June/July 2019

### Programming in C and Data Structures

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE hill questions, choosing ONE full question from each module.

#### Module-1

- 1 a. Write a general structure of C program. Explain with example. (06 Marks)
- b. List basic data types in C. Write the significance of each data type. (04 Marks)
- c. What is Variable? Explain the syntax of variable declaration and variable initialization. (06 Marks)

OR

- 2 a. With syntax and example, explain the formatted and unformatted input and output functions in C. (06 Marks)
- b. Write a C program to convert temperature from degree centigrade to Fahrenheit. (04 Marks)
- c. Explain various operators supported by C. (06 Marks)

#### Module-2

- 3 a. Explain the syntax of for loop and write a program using tbr loop to find sum of first n natural numbers. (08 Marks)
- b. Explain the syntax of if statement and write a program to find largest of 3 numbers using if statement. (08 Marks)

OR

- 4 a. With example, explain the syntax of switch statement. (06 Marks)
- b. Explain Break and Continue statements. (04 Marks)
- c. Differentiate between while and do — while loops. (06 Marks)

#### Module-3

- 5 a. Explain declaration and initialization of two dimensional array and write a program to multiply two matrices. (10 Marks)
- b. What is function? Explain the differences between call by value and call by reference. (06 Marks)

OR

- 6 a. Explain the various string manipulation functions. (06 Marks)
- b. Write a C program to find factorial of a number using recursion. (04 Marks)
- c. Explain with example syntax of puts and gets functions. (06 Marks)

#### Module-4

- 7 a. What is File? Explain any five file manipulation functions with example. (08 Marks)
- b. Write a C program to maintain record of n students with appropriate fields and print the marks of student if name is entered. (08 Marks)

OR

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- 8 a. What is Structure? Explain the syntax of structure declaration. Explain structure within structure with an example. (08 Marks)  
b. Write a C program to read text from file and display it on screen. (08 Marks)

**Module\_5**

- 9 a. What is Stack? Explain various stack operations. (08 Marks)  
b. What is Pointer? Write a C program to swap two numbers using pointers. (08 Marks)

**OR**

- 10 a. What is Dynamic Memory Allocation? Explain the four functions for memory management. (08 Marks)  
b. Explain various Pre processor directives. (08 Marks)

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