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14PCD13/23

First/Second Semester B.E. Degree Examination, Dec.2016/Jan.2017
Programming in 'C' and Data Structures

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting ONE full question from each module.***

Module-1

1 a. List all the restrictions on the variable names. **(06 Marks)**
b. Explain the block structure of a 'C' program. **(08 Marks)**
c. What are the basic data types available in 'C"? Write the significance of each data type. **(06 Marks)**

2 a. What is an assignment statement? Give the general form of an assignment statement. **(05 Marks)**
b. Explain with example, the various constants available in 'C' program. **(05 Marks)**
c. List and explain any five operators used in 'C' programming language. **(10 Marks)**

Module-2

3 a. Explain with example, the meaning of statement and block in a 'C' program. **(05 Marks)**
b. Explain with a syntax, the different loops used in 'C' program. **(09 Marks)**
c. Write a program in 'C' to find the sum of 'n' natural number without using any loops. **(06 Marks)**

4 a. Explain with example, the need of 'break' statement in a 'C' program. **(05 Marks)**
b. Write a 'C' program to demonstrate the use of unconditional goto statement. **(06 Marks)**
c. Explain with syntax, if, if-else and nested if-else statements in 'C' program. **(09 Marks)**

Module-3

5 a. What is the purpose of an array? Explain how two dimensional arrays is declared and initialized. **(06 Marks)**
b. Explain with example :
i) Character string
ii) String literal. **(06 Marks)**
c. Write a program in 'C' using functions to swap two numbers. **(08 Marks)**

6 a. Explain with syntax and example, the different types of string manipulation functions. **(10 Marks)**
b. Explain with example, the general form of puts and gets function. **(04 Marks)**
c. What are the three possibilities of defining a user defined functions in 'C'? **(06 Marks)**

Module-4

7 a. What is a structure data type? Give the general form of a structure declaration. **(05 Marks)**
b. Explain the syntax of fprintf and fscanf functions in 'C'. **(05 Marks)**
c. Using the structure data type, write a program in 'C' to read a student record from the keyboard and store it in a file called student·dot. **(10 Marks)**

8 a. Explain the differences between arrays and structures. **(05 Marks)**

b. What is a file? Explain fopen( ) and fclose( ) functions in 'C' language. **(06 Marks)**

c. Write a program in 'C' using structure to read USN, name and marks in 3 subjects for each student and store it in a file called studmarks·dat. **(09 Marks)**

Module-5

9 a. Write a 'C' program to define macros for logical operators. **(08 Marks)**

b. Explain the following :

i) preprocessor directive

ii) malloc( ) function

iii) # include directive. **(06 Marks)**

c. Explain the need of dynamic memory allocation. **(06 Marks)**

10 a. Explain with example # define directive. **(04 Marks)**

b. What is a stack? What are the operations we can carry out on a stack? **(08 Marks)**

c. Write a program in 'C' to create a simple linked list. **(08 Marks)**

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