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14PCD13/23

First/Second Semester B.E. Degree Examination, June/July 2018
Programming in C and Data Structures

Time: 3 hrs.

Max. Marks:100

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

Module – 1

- 1 a. Explain basic concepts of C program. (08 Marks)
b. Define variable. Give example. List out any four rules to be followed while using a variable. (06 Marks)
c. Write a C program to swap the contents of two variables. (06 Marks)
- 2 a. Explain relational operators in C with example. (08 Marks)
b. Define Pseudocode. What is its purpose? Write pseudocode to display numbers from 1 to 10 along with their squares. (06 Marks)
c. What would be the value of 'a' after the execution of the following expressions:
(i) $a = (a++) + (++a)$ (ii) $a = (--a) - (a--)$ (06 Marks)

Module – 2

- 3 a. Explain single selection and two way selection in C language along with syntax. (08 Marks)
b. What is purpose of switch statement? Explain with syntax. (04 Marks)
c. Write a C program to simulate the working of a calculator with addition, subtraction, multiplication and division. Use switch. (08 Marks)
- 4 a. How do you perform looping in C? Give the syntax of loop constructs. (08 Marks)
b. Explain the following statements supported in C – break, continue, goto. (06 Marks)
c. Write a C program to find the sum of individual digits of the given number. (06 Marks)

Module – 3

- 5 a. Define array. List four properties of an array. Explain declaration of single dimensional array with example. (08 Marks)
b. Explain call by value and call by reference with example. (06 Marks)
c. Write a program to accept a string and check whether it is palindrome or not. (06 Marks)
- 6 a. Explain function declaration, function definition and function call. (06 Marks)
b. Explain any four string library functions with example. (08 Marks)
c. Write a recursive program to find factorial of a number. (06 Marks)

Module – 4

- 7 a. What is a structure? Give its syntax. How to declare a structure? (06 Marks)
b. Using structures with a C program that takes book ID, Author name, Publisher name and price for a book as input and prints the same information as output. (08 Marks)
c. What is a text file? What are various steps to be performed when we do file manipulations? (06 Marks)

- 8 a. Write a program to open a file in read only mode. (08 Marks)
b. Explain array of structures with example. (06 Marks)
c. What is the use of fscanf () and fprintf () function? Explain with syntax. (06 Marks)

Module - 5

- 9 a. What are preprocessor directives and symbolic constants? Write a program to show the usage of symbolic constant. (08 Marks)
b. List out any four advantages of preprocessor. (04 Marks)
c. What is dynamic memory allocation? Write and explain different dynamic memory allocation in C. (08 Marks)
- 10 a. Write a C program to compare two strings using pointers. (08 Marks)
b. Define Stack and Queue. Outline their applications. (06 Marks)
c. Explain any two preprocessor directives with example. (06 Marks)

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