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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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