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18CPS13/23

First/Second Semester B.E. Degree Examination, June/July 2024
C-programming for Problem Solving

Time: 3 hrs.   Max. Marks: 100

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

Module-1

1 a. Explain the following :
   i) Generations of computer
   ii) Computer in a network.   **(08 Marks)**
   b. Define data type? Explain various data types available in C with an example. **(08 Marks)**
   c. Identify whether the given variable names are valid or invalid with a suitable reason.
   i) First_tag ii) Char iii) group one iv) int_type.   **(04 Marks)**

OR

2 a. Explain the basic structure of C program with an example.   **(08 Marks)**
   b. Write a note on operator precedence and associativity.   **(08 Marks)**
   c. Evaluate the following expressions :
   i) $100\% 20 < = 20 - 5 + 100\% 10 - 20 = = 5 > = 1! = 20$
   ii) $a + = b * = c - = 5$ where $a = 3, b = 5$ and $c = 8$.   **(04 Marks)**

Module-2

3 a. Explain the following with syntax and an example : i) if else   ii) switch. **(08 Marks)**
   b. Write a C program to compute the roots of a quadratic equation by accepting the coefficients and print appropriate messages.   **(08 Marks)**
   c. Explain the following : i) goto   ii) break.   **(04 Marks)**

OR

4 a. Write a C program for plotting Pascal of a triangle.   **(08 Marks)**
   b. Explain the formatted output statement with an example.   **(08 Marks)**
   c. Differentiate between while and do-while loop.   **(04 Marks)**

Module-3

5 a. Explain the declaration and initialization of one dimensional array with an example.
                                                                                (08 Marks)
   b. List all the string manipulation functions and explain string comparison and string copy functions with an example.   **(08 Marks)**
   c. Write a note on how a list of names can be stored in a two dimensional character array.
                                                                                (04 Marks)

OR

6 a. Write a program to sort the given set of N numbers using bubble sort.   **(08 Marks)**
   b. Explain the declaration and different way of initializing two dimensional array with an example for each.   **(08 Marks)**
   c. Write a program to copy one string into another and count the number of characters copied.
                                                                                (04 Marks)

Module-4

7 a. Explain in detail pass by value and pass by reference with an example for each. **(08 Marks)**
   b. Explain the different categories of function with an example for each. **(08 Marks)**
   c. Write a C program to convert binary number to decimal number using recursion. **(04 Marks)**

OR

8 a. Explain the following :
      i)   Function definition
      ii) Function declaration
      iii) Function call. **(08 Marks)**
   b. What is recursion? Write a program to find the factorial of a given number using recursion concept. **(08 Marks)**
   c. Write a program to swap two numbers by using call by reference. **(04 Marks)**

Module-5

9 a. Define structure? Explain the declaration and initialization of structure with an example. **(08 Marks)**
   b. Explain the concept of pointer to pointer with an example. **(08 Marks)**
   c. Write a note on array of structures. **(04 Marks)**

OR

10 a. Write a program to read, write and compute the average marks and the students solving above and below the average marks for a class of N students using structures. **(08 Marks)**
   b. What is a pointer? Explain declaration and initialization of pointer with an example. **(08 Marks)**
   c. Explain the following preprocessor directives.   i) #define   ii) #error. **(04 Marks)**

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