CBCS SCHEME

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17PCD13/23

First/Second Semester B.E. Degree Examination, Aug./Sept. 2020
Programming in C and Data Structures

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. What is Pseudocode? Write pseudocode to swap the contents of two variables. **(06 Marks)**

b. Explain the use of following statements in C with syntax and example.
   i) Declaration statement
   ii) Assignment statement
   iii) Formatted input/output statement. **(10 Marks)**

c. Define the following with example.
   i) Variable ii) Keyword iii) Identifier v) Constant. **(04 Marks)**

OR

2 a. List the operators used in C. Explain basic data types in C language. **(06 Marks)**

b. Define precedence and Associatively of an operator, and evaluate the following expressions.
   i) a + 2 > b || !c && a = = d || a – 2 <= e
   Where a = 11, b = 6, c = 0, d = 7 and e = 5.
   ii) 5*(11.0 –5) * 2/4 + 9 **(08 Marks)**

c. Write C program for the following :
   i) Compute sum and average of any three integer numbers
   ii) Compute compound interest. **(06 Marks)**

Module-2

3 a. Explain the working of following statements in C language with syntax and example
   i) The nested if else statement
   ii) The switch statement
   iii) The do-while loop. **(09 Marks)**

b. Write a C program to find sum of odd and even numbers from 1 to n. **(05 Marks)**

c. Write a C program to print Fibonacci series up to n terms. **(06 Marks)**

OR

4 a. Explain how break and continue statement are used in the loop of C program. **(08 Marks)**

b. Write the following statement into nested conditional operator and nested if else statement.
"Consider weekly salary of a salesman who sells some products, if X is the number of products sold in a week his salary is given by as bellow".
   salary = 4x + 100 for x < 40
   salary = 300 for x = = 40
   salary = 4.5x + 15 for x > 40 **(04 Marks)**

c. Write a C program to reverse the digits of gives integer number and check for palindrome. **(08 Marks)**

Module-3

5 a. What is array? Write a C program to read values into an two dimensional array and display the contents of the same array. **(06 Marks)**

b. Explain the use of following functions with example :
i) getchar( ) ii) gets( ) iii) putchar( ) iv) puts( ). **(08 Marks)**

c. What are three important elements of user defined functions? Explain each with syntax and example. **(06 Marks)**

OR

6 a. Write a C program to perform addition of two matrices. **(08 Marks)**

b. Explain the use of stremp( ) and strcat( ) functions with example and write a C program to count number of a's in a given string. **(06 Marks)**

c. Write a program to sort the elements of an array by passing the array to a function called as sort( ). **(06 Marks)**

Module-4

7 a. What is Structure? Define a structure type employee that contain Ename, Eid, and salary using this structure, write a C program to Read this information for one employee from the keyboard and print the same. **(08 Marks)**

b. Explain Defining, opening and closing of a file with example. **(06 Marks)**

c. Explain array of structure and nested structure with example. **(06 Marks)**

OR

8 a. Write programming using structure to accept the rollno, name and marks obtained in 3 tests of three students and display name, rollno and marks in 3 subjects and average. **(08 Marks)**

b. Explain File I/O operations and write a program to read data from the keyboard and write if to a file named as 'Input' then read the data from 'Input' file and display it on to the screen. **(12 Marks)**

Module-5

9 a. What is Pointer? Explain how pointer variable is declared and initialized. **(05 Marks)**

b. What are primitive and Non-primitive Data structure? Explain. **(07 Marks)**

c. Write a program using pointer to compute the sum of all elements stored in an array. **(08 Marks)**

OR

10 Write a short notes on :

a. Pinter to pointer **(04 Marks)**

b. Stack **(04 Marks)**

c. Queue **(04 Marks)**

d. Dynamic memory management **(04 Marks)**

e. Preprocessor directives. **(04 Marks)**

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