CBCS SCHEME

USN

18CPS13/23

First/Second Semester B.E. Degree Examination, Aug./Sept.2020

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. Define Computer. Explain the generations of computer. **(08 Marks)**

b. List the input devices of computer and explain any two input devices. **(06 Marks)**

c. Define Algorithm. Write an algorithm to find the area and perimeter of a rectangle. **(06 Marks)**

OR

2 a. Explain the basic structure of C program, with an example. **(08 Marks)**

b. What is an Operator? List and explain any 4 types of operator. **(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 formatted input output functions in C with examples. **(06 Marks)**

b. What are different types of conditional statements? Explain if, if else and nested if with syntax and examples. **(08 Marks)**

c. Write a C program to find the sum of natural numbers from 1 to N using while loop. **(06 Marks)**

OR

4 a. List the differences between while and do – while loop along with syntax and example. **(06 Marks)**

b. Write a C program to find all possible roots of quadratic equation and print them with appropriate messages. **(08 Marks)**

c. Explain break and continue statements with example. **(06 Marks)**

Module-3

5 a. What is an array? Write syntax for declaring two dimensional array and initialize the same with suitable examples. **(08 Marks)**

b. Write a C program to find biggest of n numbers using arrays. **(06 Marks)**

c. List the differences between Linear and binary search. **(06 Marks)**

OR

6 a. Explain any 4 string manipulation library functions with examples. **(08 Marks)**

b. Write a C program to find transpose of a given matrix. **(06 Marks)**

c. Write an algorithm for linear search. **(06 Marks)**

Module-4

7 a. Define Function. What are the advantages of user defined functions? **(06 Marks)**

b. Explain types of functions based on parameters. **(08 Marks)**

c. Define Recursion. Write a C program to find factorial of a number using recursion. **(06 Marks)**

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

8 a. Define the following :
i) Actual parameter ii) Formal parameter
iii) Global variable iv) Local variable. **(06 Marks)**

b. Write a C function isprime (num) that accepts an integer argument and returns 1 if the argument is prime, 0 otherwise. Write a C program that invokes this function to generate prime numbers between given range. **(08 Marks)**

c. Write a C program to generate Fibonacci series using recursive function. **(06 Marks)**

Module-5

9 a. What is a Structure? Explain structure with syntax and example. **(08 Marks)**

b. Differentiate between Structures and Unions. **(04 Marks)**

c. Write a C program to maintain record of n students using structures with 4 fields (Rollno, marks, name and grade). Print the names of students with marks > = 70. **(08 Marks)**

OR

10 a. What is a Pointer? Explain how pointer variable is declared and initialized. **(06 Marks)**

b. What is Preprocessor directive? Explain #define and #include preprocessor directive. **(06 Marks)**

c. Explain call by value and call by reference with functions. **(08 Marks)**

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