

CBCS SCHEME

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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)

1 of 2

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.

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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)
