

CBCS SCHEME

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15PCD13/23

First/Second Semester B.E. Degree Examination, Dec.2018/Jan.2019 Programming in C and Data Structures

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. What is an operator? Explain the arithmetic, logical, and bitwise operators in C language. (08 Marks)
b. Write a C program which takes as input p,t,r. Compute the simple interest and display the result. (08 Marks)

OR

- 2 a. What is the purpose of pirntf() statement? Explain the formatted printf() along with examples. (08 Marks)
b. What is type conversion? Illustrate different ways of type conversion with an example. (08 Marks)

Module-2

- 3 a. Write a C program to calculate area of circle, rectangle and triangle using SWITCH case. (08 Marks)
b. What is two way selection statements? Explain nested if statement and cascaded IF-ELSE with examples. (08 Marks)

OR

- 4 a. Write a C program to find GCD of two non-zero integer numbers. If the first number is less than the second number, then the program must exchange the two numbers before computing GCD. (08 Marks)
b. Illustrate with an example break and continue statements. (03 Marks)
c. Compare while loop and do-while loop with syntax, flowchart and examples. (05 Marks)

Module-3

- 5 a. Define an array. Explain declaration and initialization of one dimensional array with an example. (08 Marks)
b. Write a C program to accept an alphanumeric (Eg : "ABC123DEFR") string, to count the number of characters and digits. Also display the result. (08 Marks)

OR

- 6 a. Explain any four string manipulation functions with examples. (08 Marks)
b. Write a C program to check a number is a prime number or not. (04 Marks)
c. What is function? Write a C program to find square of a number using function. (04 Marks)

Module-4

- 7 a. Write a C program to create a structure using typedef and input the following details of "N" students (USN : String Name : String Average : float grade : char). Print the names of students with their average is $\geq 60\%$. (10 Marks)
- b. Differentiate between structure and union with examples. (06 Marks)

OR

- 8 a. Explain how the structure variable passed as a parameter to a function with example. (06 Marks)
- b. Explain the following file operations along with syntax and examples : (10 Marks)
- i) fopen() ii) fclose() iii) fscanf() iv) fprintf() v) fgets().

Module-5

- 9 a. List out various memory allocation and de-allocation mechanisms available in C? Write a C program to demonstrate them. (08 Marks)
- b. Discuss any two preprocessor directives in 'C'. (03 Marks)
- c. Define pointer. What are the operators used by pointer with an example. List the advantages and disadvantages of pointer. (05 Marks)

OR

- 10 a. Describe the two ways of passing parameters to function with examples. (08 Marks)
- b. Define stack. Explain the primitive operations on the stack. Write a C program to demonstrate it. (08 Marks)
