CBCS SCHEME

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18CPS13/23

First/Second Semester B.E. Degree Examination, Feb./Mar. 2022 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

- Write an algorithm and draw flow chart, which reads 3 sides of a triangle and prints whether 1 it is equilateral, isosceles and scalene. (08 Marks)
 - Write basic structure of C program and explain its different sections. Also, give an example. (08 Marks)
 - Identify the following variable names. State whether variable is valid or invalid. If invalid give reasons i) INT ii) for iii) larea iv) STATIC (04 Marks)

List and mention function of any five flow chart symbols.

(05 Marks)

b. Define C-token. List and explain different C-tokens.

(10 Marks)

c. Write a C program to swap contents of two variables. Print contents of variable before swap and after swap. (05 Marks)

Module-2

- a. Distinguish between the following functions:
 - scanf() and gets() i)
 - ii) scanf() and printf()

(06 Marks)

- putchar() and printf() b. Write a C program to generate and print first 'N' Fibonacci numbers using looping constructs. (08 Marks)
- Write the syntax of Nested if. else statement and explain its working.

(06 Marks)

OR

Write a C program to print the string "PROGRAM" in following pattern using formatted output statement

> P R R R

> > (08 Marks)

- Distinguish between the following:
 - while loop and do..while loop
 - break and continue.

(06 Marks)

c. Write the syntax of else..if ladder and explain its working.

(06 Marks)

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Module-3

- 5 a. Define an array. Write the syntax of declaration and initialization of one-dimensional array and two-dimensional array with example for each. (10 Marks)
 - Write a C program to search a key element in the given sorted array of integer numbers using binary search technique. (06 Marks)
 - c. Write a C program to copy one string to another without using strepy(). (04 Marks)

OR

- 6 a. Write a C program to read a square matrix A (m × n) and find the trace of the matrix.
 - (08 Marks) (06 Marks)

- List advantages and disadvantages of array.
- c. Write the syntax and give one example for built-in string functions listed below:
 i) strncmp() ii) strncpy() iii) strrcv() iv) strncat() v) strcat() vi) strlcn()

(06 Marks)

Module-4

- 7 a. List and explain two techniques for passing parameters from one function to another by taking an example of C program. (10 Marks)
 - b. Differentiate between recursion and iteration. (06 Marks)
 - c. Write a C program to find factorial of a given number using recursion. (04 Marks)

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- 8 a. Write a C program to compute nor for the given values of n and r using recursion. (10 Marks)
 - b. Distinguish between built-in functions and user defined functions. (04 Marks)
 - List any six benefits of functions.

(06 Marks)

- 9 a. Write a note on the following by giving segment of C program:
 - i) Array of structure
 - ii) Structure within a structure.

(08 Marks)

- b. Define pointer. Mention any two differences between a pointer variable and a normal variable.

 (04 Marks)
- c. What is pre-processor directives? Mention significance of following C-pre-processors:
 - i) #ifdef ii) #pragma iii) #include iv) #undef v) #define vi) #error (08 Marks)

OR

- a. Create a structure student having members name and USN. Write a C program which reads details of 5 students and print the same. (10 Marks)
 - b. Define macro. Using macros, write a C program to find area of circle. (06 Marks)
 - Define pointer. Write the syntax and give an example of declaring and assigning a value to pointer. (04 Marks)
