M 085/094

Total No. of printed pages = 02

Monsoon, 2023
B.Tech Semester Examinations
PROGRAMMING FOR PROBLEM SOLVING
Course Code: BCS23101T

Full Marks – 50   **Time – 2 hours**

The figure in the margin indicates full marks for the questions.

Part A
Answer ALL questions
(10 x 1 mark = 10 marks)

1.   a) The compilation of C program starts from
         i) preprocessor   ii) main   iii) header file   iv) variable declaration

      b) Which loop is the fastest?
         i) while   ii) do while   iii) for   iv) switch

      c) Which of the following is not a keyword?
         i) char   ii) break   iii) main   iv) switch

      d) How many times the following loop runs?
                          for(x=0;x=3;x++)
         i) none   ii) 3   iii) infinitely   iv) 4

      e) Which of the following is true for variable names in C?
         i) They can contain alphanumeric characters as well as special characters
         ii) It is not an error to declare a variable to be one of the keywords(like goto, static)
         iii) Variable names cannot start with a digit
         iv) Variable can be of any length

      f) What is the length of an array if its first index is denoted by i and last index by j.
         i) i + j - 1   ii) i- j - 1   iii) j-i + 1   iv) j - i - 1

      g) What is #include <stdio.h>?
          i) Preprocessor directive
          ii) Inclusion directive
          iii) File inclusion directive
          iv) None of the mentioned

      h) Which of the following is not an operator in C?
         i) ,   ii) sizeof()   iii) ~   iv) None of the mentioned

      i) What is the output of this statement "printf("%d", (a++))"?
         i)The value of (a + 1)

ii) the current value of a

iii)Error message

iv) Garbage

j) How many bytes does "int = D" use?
  i) 0   ii) 1   iii) 2 or 4   iv) 10

Part B
Answer ANY FOUR questions
(4 x 5mark = 20 marks) (Max.100 words each)

2.   Write the output of the following codes and justify: 2 × 2.5 = 5
  a)   int a[ ] = {2, 3, 4, 5};
      printf("%d", 2[a]);

  b)   int a=10;
    while(a >= 10);
{
printf("Hello\n");
          break;
    }

3.   Write a C program to find the area of a triangle using function with argument and no returntype.   5
4.   Write a C program to show the use of malloc( ) function.   5
5.   What is an algorithm and flowchart? Draw the flowchart to find the largest of three numbers.   2+3
6.   Write a C program to find the factorial of a number using recursive function.   5
7.   Explain the control statements used in C with the help of proper flowcharts and syntax.   5

Part C
Answer ANY TWO questions
(2 x 10mark = 20 marks) (Max.200 words each)

8.   Write a C program to perform the addition of two matrices. Check the condition to perform addition.   10
9.   Write a C program to search a number in an 1D array and display the biggest number in the array.   10
10.   A class contains 50 students with records of name, roll no, branch and percentage of last exam. Write a C program using structure to store and display the records of 50 students.   10