Code No.: CS103ES | R22 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
I–B.TECH–I–Semester End Examinations (Regular) - March- 2023
PROGRAMMING FOR PROBLEM SOLVING
(Common for all)

[Time: 3 Hours] **[Max. Marks: 60]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 10 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(10 Marks)**

1. a) Write a C Program for perimeter of rectangle. [1M]
   b) Identify the following as valid/invalid Identifiers. [1M]
      i. num2 ii. +add
   c) If the size of integer is 4 bytes, identify and give the output of the program? [1M]

```
int main()
{
int arr[]={12,13,14,15,16};
printf("%d, %d, %d", sizeof(arr), sizeof(*arr), sizeof(arr[0]));
 return 0;
}
```

   d) Write a program to read and display the elements using 1-D array. [1M]
   e) Identify and determine what does the following segment of code do [1M]
      fprintf(fp, _ , "Copying");
   f) Write the importance of fseek() function. [1M]
   g) Determine the maximum number of arguments that can be passed in a single function in C language. [1M]
   h) Mention different Dynamic Memory Allocation functions. [1M]
   i) What is time Complexity of Bubble sort? [1M]
   j) How can you say that Linear Search is different from Binary search. [1M]

PART-B **(50 Marks)**

2. Write a C Program for finding maximum and minimum numbers of a given set. [10M]

OR

3. Explain Storage classes in C language with examples. [10M]

4. Write a program to perform addition of two matrices. [10M]

OR

5. Explain the process of declaring and initializing pointers. Give an example. [10M]

6. Explain the facilities provided by the C preprocessor with examples. [10M]

OR

7. Write a C program to append the contents of a file to another file? [10M]

8. What is recursion? Write a complete C program that reads a positive integer, calculate the factorial of the number using recursion, and print the result. [10M]

OR

9. Explain about Dynamic memory allocation functions in C. [10M]

10. Write a program to implement Binary search with an example. [10M]

OR

11. Write an algorithm or C program for sorting integers in ascending order using selection sort. [10M]

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