Code No.: CS103ES | R20 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
I–B.TECH–I–Semester End Examinations (Supply) -February- 2024
PROGRAMMING FOR PROBLEM SOLVING
(Common for all)

[Time: 3 Hours] **[Max. Marks: 70]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 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 **(20 Marks)**

1. a) Discuss the structure of a C program. [2M]
   b) Define Algorithm and write its characteristics. [2M]
   c) List types of arrays. [2M]
   d) Compare structure and union? [2M]
   e) Distinguish between the following modes. [2M]
      i. w and w+
      ii. r and r+
   f) Define preprocessor? List out the preprocessor commands? [2M]
   g) Demonstrate some standard input /output functions. [2M]
   h) What is static memory allocation and dynamic memory allocation? [2M]
   i) Write the complexity of the Linear &Binary search. [2M]
   j) Differentiate between linear and binary search. [2M]

PART-B **(50 Marks)**

2. List the steps to print biggest of three numbers (Algorithm)? [10M]

OR

3. What is compiler? Explain compiling and executing of a program in detail. [10M]

4. Define a structure. How to initialize a structure? Explain with an example? [10M]

OR

5. Define string and explain with a program. [10M]

6. How to create and store files using 'C' language? [10M]

OR

7. Explain about preprocessor directives with program? [10M]

8. Write a program for Fibonacci series using recursive function? [10M]

OR

9. Discuss about the following with an example. [10M]
   i. malloc() ii. calloc() iii. realloc() iv. free()

10. Explain Binary search technique with example? [10M]

OR

11. Choose any one of the sorting technique and Sort the following numbers [10M]
    34, 5, 67, 8, 435, 2,78,45,12

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