PART-B

4 x 15 = 60M

UNIT-I

2. a. Explain problem definition with a suitable example. Summarize the requirement of problem solving by computers and steps involved while solving a problem. **7M**

    b. Illustrate different implementation issues in problem solving and explain characteristics of an algorithm. **8M**

(or)

3. a. Develop an algorithm and draw the flow chart to generate the Fibonacci sequence for n terms. **7M**

    b. Outline the computational steps involved to find Greatest Common Divisor (GCD) of two numbers along with flowchart. **8M**

UNIT-II

4. a. Discuss about the structure of a C program. Write a detailed note on input and output functions. **7M**

    b. Write the syntax of 'nested if' statement and use it to write a C program to award grade to student based on percentage of marks. **8M**

(or)

5. a. What is an array? Explain the declaration and initialization of one and two dimensional arrays with examples. **7M**

    b. Write a C program to read the age of 15 persons and find out how many of them fall under the following categories using for loop

    i) Still a baby- age 0 to 5

    ii) Attending school - age 6 to 17

    iii) Adult life-age 18 & over **8M**

UNIT-III

6. a. Define string. Briefly explain about various string manipulation functions. **7M**

    b. Construct a C program to check the number is prime (or) not using functions. **8M**

(or)

7. a. Explain about Arrays and Pointers. **7M**

    b. What is Dynamic Memory Allocation? Explain in detail. **8M**

UNIT-IV

8. a. What is enumerated data type? Print the months of a year using the C enumerated data type. **7M**

    b. Explain various file input and output functions. **8M**

20ES1103

(or)

9. a. Differentiate between structure and union. Give brief description of each with syntax and examples. **7M**

   b. Write a C program to merge the contents of two files. **8M**

* * *

VR20

Reg. No:

VELAGAPUDI RAMAKRISHNA
SIDDHARTHA ENGINEERING COLLEGE
(AUTONOMOUS)

I/IV B.Tech. DEGREE EXAMINATION, JULY, 2021

First Semester

20ES1103 PROGRAMMING FOR PROBLEM SOLVING

Time: 3hours *Max. Marks: 70*

Part-A is compulsory

Answer One Question from each Unit of Part-B

Answer to any single question or its part shall be written at one place only

PART-A

10 x 1 = 10M

1. a. Define algorithm and flowchart.

   b. Why step-wise refinement is required and how it is different from the top-down design approach?

   c. Define pre-tested loop.

   d. What is meant by keyword in C language? Give any two examples.

   e. If i = 5 and j = 10 then what is i--*++j.

   f. Define Pointer.

   g. How recursion is different from iteration?

   h. If p and q are pointer variables, then is p+q a valid statement?

   i. Compare append and write modes in a file.

   j. Define Union in C.