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TERM END EXAMINATIONS (TEE) – December 2021- January 2022

Programme	: B.Tech	Semester	: Fall 2021-22
Course Name	: Introduction to Problem Solving and Programming	Course Code	: CSE1021
Faculty Name	: Dr. Chandan Kumar Behera	Slot / Class No	: C21+C22+C23/0098
Time	: 1½ hours	Max. Marks	: 50

Answer ALL the Questions

Q. No.	Question Description	Marks

PART - A (30 Marks)

1 (a) Draw the flowchart for linear search and also, write the Python program for the same.   10

OR

   (b) Write a python program to print 1 to n, by using recursive function. Also, justify your   10
        code through an example of n=8.

2 (a) Write a python program to print the following pattern.   10

        If the input is 6, then the output should be:

```
        A
       B  B
      C  C  C
     D  D  D  D
    E  E  E  E
   F F F  F  F F
    E  E  E  E
     D  D  D  D
      C  C  C
       B  B
        A
```

OR

   (b) Write the step by step procedure to calculate the GCD of three numbers. Justify your   10
        logic through an example.

3 (a) Explain the difference among list, tuple and set. Write a python program to delete all   10
        the duplicate elements of list.

OR

   (b) Write a python program to insert an element in a sorted list. Mention separate   10
        functions for input, output and insertion of an element.

4   Put the brackets in the mentioned expression at the right places according to the   10
     precedence of each operator and finally calculate the value of e.

     The expression: e = b = d + c / k - a * b % c
             where, a = 2, b = 200, c = 33, d = 4, e = 9 and k = 5.

5   Write pseudocode to find the number of occurrences of an element present in a sorted   10
     tuple, by using binary search.
     Also, Justify your code through the example mentioned below:
             T = (12, 12, 12, 12, 45, 45, 46, 59, 59, 59), Search: 12
                                       ⇔⇔⇔