Subject: Problem Solving Using Python (01CT0512)

Sem: 5th   **20 marks**

Assignment 1: Learning Python

1	Write a Python program to print the following string in a specific format
	Twinkle, twinkle, little star,\n",
	      How I wonder what you are!
	         Up above the world so high
	         Like a diamond in the sky.
	Twinkle, twinkle, little star,
	      How I wonder what you are

2	Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old.
3	Write a Python program that accepts an integer (n) and computes the value of n+nn+nnn. Sample value of n is 5 Expected Result : 615
Conditions and Loops. Implement it using Function	
4	Write a Python program which takes two digits m (row) and n (column) as input and generates a two-dimensional array. The element value in the i-th row and j-th column of the array should be i*j. Input Input number of rows: 3 Input number of columns: 4 Output [[0, 0, 0, 0], [0, 1, 2, 3], [0, 2, 4, 6]]
5	Write a Python program to check a triangle is valid or not
6	Write a Python program to construct the following pattern, using a nested loop number. 1 22 333 4444 55555 666666 7777777 88888888 999999999
7	Write a Python program to construct the following pattern, using a nested for loop. *
8	Write a Python program that accepts a string and calculate the number of digits and letters Sample Data : "Python 3.2" Expected Output :

	Letters 6 Digits 2
9	Count the number of even and odd numbers from a series of numbers Input numbers = (1, 2, 3, 4, 5, 6, 7, 8, 9) Output Number of even numbers : 4 Number of odd numbers : 5
10	Write a Python program to get the Fibonacci series between 0 to 50
11	Write a Python program to find those numbers which are divisible by 7 and multiple of 5, between 1500 and 2700
12	Generate a random number between 1 and 9 (including 1 and 9). Ask the user to guess the number, then tell them whether they guessed too low, too high, or exactly right.
13	Write a Python program to check the validity of a password (input from users). Validation : At least 1 letter between [a-z] and 1 letter between [A-Z]. At least 1 number between [0-9]. At least 1 character from [$#@]. Minimum length 6 characters. Maximum length 16 characters. Input W3r@100a Output Valid password
14	Write a Python program to check a triangle is equilateral, isosceles or scalene. Note : An equilateral triangle is a triangle in which all three sides are equal. A scalene triangle is a triangle that has three unequal sides. An isosceles triangle is a triangle with (at least) two equal sides.
15	Write a Python program to check whether an alphabet is a vowel or consonant
16	Convert a list of characters into a string Input ['a', 'b', 'c', 'd'] Output abcd
17	Write a Python program to find common items from two lists. input color1 = "Red", "Green", "Orange", "White" color2 = "Black", "Green", "White", "Pink" output {'Green', 'White'}
18	Write a Python program to get the difference between the two lists Input list1 = [1, 2, 3, 4] list2 = [1, 2] Output [3,4]
19	Write a Python program to get the smallest number from a list. max_num_in_list([1, 2, -8, 0]) return 2
20	Write a Python program to get the frequency of the elements in a list.

input my_list = [10,10,10,10,20,20,20,20,40,40,50,50,30] outout {10: 4, 20: 4, 40: 2, 50: 2, 30: 1}

Note: You need to submit 2 files on canvas:

1. PDF file with following format:
   Question Number
   Question
   Solution Code
   Screenshot of the Output

2. Zip file of all the codes renamed as Student ID_Question Number

Plagiarism in any code will result into direct assignment marking as 0.

Deadline: August 14, 2022 (midnight)