PYTHON TEST PAPER

1. **Function** Two-fer or 2-fer is short for two for one. One for you and one for me.

"One for X, one for me."

When X is a name or "you".

If the given name is "Alice", the result should be "One for Alice, one for me." If no name is given, the result should be "One for you, one for me."

```
def Two-fer():
        return “One for X, one for me."
```

2. Determine if a sentence is a pangram. A pangram is a sentence using every letter of the alphabet at least once. The best known English pangram is:

“The quick brown fox jumps over the lazy dog”.

The alphabet used consists of ASCII letters A to Z, inclusive, and is case insensitive. Input will not contain non-ASCII symbols.

3. a Python function that accepts a string and calculate the number of uppercase letters and lowercase letters.

Sample String: 'The quick Brow Fox'
Expected Output:
No. of Upper case characters: 3
No. of Lower case Characters: 12

4. Write a Python function that takes a list and returns a new list with unique elements of the first list.

Sample List: [1,2,3,3,3,3,4,5]
Unique List: [1, 2, 3, 4, 5]

5. Write a Python program to reverse a string.

Sample String: "1234abcd"
Expected Output: "dcba4321"

6. Write a Python to check whether a number is in a given range.

7. Write a Python program to print the even numbers from a given list.

Sample List:[1, 2, 3, 4, 5, 6, 7, 8, 9]
Expected Result: [2, 4, 6, 8]

8. Write a Python program that accepts a hyphen separated sequence of words as input and prints the words in a hyphen-separated sequence after sorting them alphabetically.

Sample Items: green-red-yellow-black-white
Expected Result: black-green-red-white-yellow

9. Write a Python program to create and print a list where the values are square of numbers between 1 and 30 (both included).

10. Write a program which will find all such numbers which are divisible by 7 but are not a multiple of 5 between 2000 and 3200 (both included).

The numbers obtained should be printed in a comma-separated sequence on a single line.

HINT: Consider use range (#begin, #end) method

11. With a given integral number n, write a program to generate a dictionary that contains (i, i*i) such that is an integral number between 1 and n (both included). and then the program should print the dictionary.

Suppose the following input is supplied to the program:

8

Then, the output should be:

{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64}

Hints:

In case of input data being supplied to the question, it should be assumed to be a console input.

Consider use dict().

12. Write a program which accepts a sequence of comma-separated numbers from console and generate a list and a tuple which contains every number.

Suppose the following input is supplied to the program:

34,67,55,33,12,98

Then, the output should be:

['34', '67', '55', '33', '12', '98']

('34', '67', '55', '33', '12', '98')

Hints:

In case of input data being supplied to the question, it should be assumed to be a console input.

tuple() method can convert list to tuple

13. Write a program that accepts a comma separated sequence of words as input and prints the words in a comma-separated sequence after sorting them alphabetically.

Suppose the following input is supplied to the program:

without,hello,bag,world

Then, the output should be:

bag,hello,without,world

Hints:

In case of input data being supplied to the question, it should be assumed to be a console input.

14. Write a program that accepts a sequence of whitespace separated words as input and prints the words after removing all duplicate words and sorting them alphanumerically.

Suppose the following input is supplied to the program:

hello world and practice makes perfect and hello world again

Then, the output should be:

again and hello makes perfect practice world

Hints:

In case of input data being supplied to the question, it should be assumed to be a console input.

We use set() method to remove duplicated data automatically and then use sorted() to sort the data.

15. Write a program that accepts a sentence and calculate the number of letters and digits.

Suppose the following input is supplied to the program:

hello world! 123

Then, the output should be:

LETTERS - 10

DIGITS - 3

16. Write a program to print odd number in a list. The list is input by a sequence of comma-separated numbers.

Suppose the following input is supplied to the program:

1,2,3,4,5,6,7,8,9

Then, the output should be:

1,3,5,7,9

17. It's February at the time of this writing, and Valentine's Day is upon us. Personally, I believe love should be celebrated every day of the year – not just on a designated date. But that's just me.

Mr. Mandeep Singh is 27 years old and yet he had no luck in his love life so far. He has lost all hope about this. Thinking that he will never have any love in his life he started to think about love between numbers. According to him two numbers are in love with each other if their bitwise-xor and sum are equal. For example: bitwise-xor of 160 and 75 is 235 and their sum is also 235. Hence 160 and 75 are in love with each other. On the other hand the bitwise-xor of 32 and 63 is 31 but their sum is 95. Hence 32 and 63 are not lovers.

In this problem Mr. Mandeep Singh will ask you question. In each question he will give you a numbers X and Y. Your task is to find out numbers are in love or not(Valentine or not). If any of the answer doesn't exist simply print None.

18. Program to find the missing number in a given arithmetic progression list

2,6,8,10,12,14,16

19. For a given integer k, print the first k rows of Pascal's Triangle. print each row with each value separated by a single space.

The Pascal Triangle

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

20. Write a program that calculates and prints the value according to the given formula:

Q = Square root of [(2 * C * D)/H]

Following are the fixed values of C and H:

C is 50. H is 30.

D is the variable whose values should be input to your program in a comma- separated sequence.

Example

Let us assume the following comma separated input sequence is given to the program:

100,150,180

The output of the program should be:

18,22,24

21. Python has many built-in functions, and if you do not know how to use it, you can read document online or find some books. But Python has a built-in document function for every built-in functions.

22. Please write a program to print 7 Python built-in functions documents, such as a int(), input(), map().

and add document for your own function

23. Write the program where the user enters a string and a substring. You have to print the number of times that the substring occurs in the given string. String traversal will take place from left to right, not from right to left.

NOTE: String letters are case-insensitive.

24. Given a Water Tank (cylindrical shape) with Height=10, radius=5. A pump having flow rate of $15m^3$ /min. write the program to find the status of the tank at user given time underflow, overflow and fill.

25. Interchange the contents of two files a) file1.txt and b) file2.txt

26. Write the program to print the multiplication table from 1 to 10 in file table.txt.

27. Change the Keys of the given dictionary in Upper case and value should be same.

D = {'first': 'this is first value ','second': 'This is second value ','GLa':'GLA University, Mathura '}

Output => D = {'FIRST': 'this is first value ','SECOND': 'This is second value ','GLA':'GLA University, Mathura '}

28. What Will Be The Output Of The Following Code Snippet?

```
my_dict = {}
my_dict[1] = 1
my_dict['1'] = 2
my_dict[1.0] = 4

sum = 0
for k in my_dict:
   sum += my_dict[k]

print (sum)
```

29. Sorting dictionary content in ascending order according to values

Q 6. Initialize a set S with single integer value and add five value from user remove a value from set S and print the removed value also.

Q 7. When will the else part of try-except-else be executed?
a) always
b) when an exception occurs
c) when no exception occurs
d) when an exception occurs in to except block

30. What is the output of the following code?

```
def  abs():
   try:
      return 0
```

```
    finally:
        return 1
k = abs()
print(k)
```