1. What is the output of the following code?

nums = set([1,1,2,3,3,3,4,4])

print(len(nums))

Ans:- 4

1. What will be the output? d = {"john":40, "peter":45} print(list(d.keys()))

Ans:- ['john', 'peter']

1. A website requires a user to input username and password to register. Write a program to check the validity of password given by user. Following are the criteria for checking password:
2. At least 1 letter between [a-z]
3. At least 1 number between [0-9]
4. At least 1 letter between [A-Z]
5. At least 1 character from [$#@]
6. Minimum length of transaction password: 6
7. Maximum length of transaction password: 12

Ans:- All options(a,b,c,d,e,f)

1. Write a for loop that prints all elements of a list and their position in the list.

a = [4,7,3,2,5,9]

Ans:-

for i in a:

print(i)

1. Please write a program which accepts a string from console and print the characters that have even indexes.

Example: If the following string is given as input to the program: H1e2l3l4o5w6o7r8l9d

Then, the output of the program should be: Helloworld

Ans:- print(''.join(i for i in str2 if not i.isdigit()))

1. Please write a program which accepts a string from console and print it in reverse order.

Example: If the following string is given as input to the program: **rise to vote sir**

Then, the output of the program should be: **ris etov ot esir**

Ans:-

str1 = "rise to vote sir"

print(str1[::-1])

1. Please write a program which count and print the numbers of each character in a string input by console.

Example: If the following string is given as input to the program: **abcdefgabc**

Then, the output of the program should be:

a,2

c,2

b,2

e,1

d,1

g,1

f,1

Ans:-

string1 = "abcdefgabc"

char\_count = {}

for char in string1:

char\_count[char] = char\_count.get(char, 0) + 1

for char, count in char\_count.items():

print(f"{char},{count}")

1. With two given lists [1,3,6,78,35,55] and [12,24,35,24,88,120,155], write a program to make a list whose elements are intersection of the above given lists.

Ans:-

list1 = [1,3,6,78,35,55]

list2 = [12,24,35,24,88,120,155]

print(list(set(list1) & set(list2)))

1. With a given list [12,24,35,24,88,120,155,88,120,155], write a program to print this list after removing all duplicate values with original order reserved.

Ans:-

orig\_list = [12,24,35,24,88,120,155,88,120,155]

print(list(dict.fromkeys(orig\_list)))

1. By using list comprehension, please write a program to print the list after removing the value 24 in [12,24,35,24,88,120,155].

Ans:-

list3 = [12, 24, 35, 24, 88, 120, 155]

list\_compre = [item for item in list3 if item != 24]

print("List after removing 24:", list\_compre)

1. By using list comprehension, please write a program to print the list after removing the 0th,4th,5th numbers in [12,24,35,70,88,120,155].

Ans:-

list4 = [12,24,35,70,88,120,155]

list\_remove\_byindex = [item for index, item in enumerate(list3) if index not in (0,4,5)]

print("List after removing 0th, 4th, and 5th elements:", list\_remove\_byindex)

1. . By using list comprehension, please write a program to print the list after removing delete numbers which are divisible by 5 and 7 in [12,24,35,70,88,120,155].

Ans:-

list4 = [12,24,35,70,88,120,155]

list\_div = [item for item in list4 if not (item % 5 ==0 and item % 7 ==00)]

print("List after removing divisible by both 5 and 7:", list\_div)

1. Please write a program to randomly generate a list with 5 numbers, which are divisible by 5 and 7 , between 1 and 1000 inclusive.

Ans:-

div\_by5and7 = [num for num in range(1,1001) if num % 5 ==0 and num % 7 ==0]

import random

random\_numbers = random.sample(div\_by5and7, 5)

print("Random numbers list:", random\_numbers)

1. Write a program to compute 1/2+2/3+3/4+...+n/n+1 with a given n input by console (n>0).

Example: If the following n is given as input to the program: 5

Then, the output of the program should be: 3.55

Ans:-

n= 5

sum\_series = 0

for i in range(1, n + 1):

sum\_series += i / (i + 1)

print(round(sum\_series,2))