# Rajalakshmi Engineering College

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## NeoColab_REC_CS23221_Python Programming

## REC_Python_Week 1_MCQ

Attempt : 1
Total Mark : 15
Marks Obtained : 14

### Section 1 : MCQ

1. What will be the output of the following code?

```
x = int(34.56 - 2 * 2)
print(x)
```

***Answer***

30

***Status :*** Correct ***Marks : 1/1***

2. What will the following code output?

```
z = 3 + 4j
print(abs(z))
```

***Answer***

5.0

***Status :*** Correct ***Marks : 1/1***

3. Which of the following can convert the string to a float number?

***Answer***

float(str)

***Status :*** Correct ***Marks : 1/1***

4. What will be the output for the below code?

```
x=15
y=12
print(x&y)
```

***Answer***

12

***Status :*** Correct ***Marks : 1/1***

5. What does 3 ^ 4 evaluate to?

***Answer***

7

***Status :*** Correct ***Marks : 1/1***

6. What will be the output of the following code?

```
X = 2+9*((3*12)-8)/10
print(X)
```

***Answer***

27.2 

***Status :*** Correct ***Marks : 1/1***

7. Which of the following expressions results in an error?

***Answer***

float('10')

***Status :*** Wrong ***Marks : 0/1***

8. Which of the following is an example of the type casting?

***Answer***

All of the above

***Status :*** Correct ***Marks : 1/1***

9. What will be the value of the following Python expression?

4 + 3 % 5

***Answer***

7

***Status :*** Correct ***Marks : 1/1***

10. Which of the following represents the bitwise XOR operator?

***Answer***

^

***Status :*** Correct ***Marks : 1/1***

11. Evaluate the expression given below if A= 16 and B = 15

A % B // A

***Answer***

0

***Status :*** Correct ***Marks : 1/1***

12. What is the value of the following expression?

float(22//3+3/3)

***Answer***

8.0

***Status :*** Correct ***Marks : 1/1***

13. What is the value of the following expression?

8/4/2, 8/(4/2)

***Answer***

(1.0,4.0)

***Status :*** Correct ***Marks : 1/1***

14. What is the output of the following program?

print((1, 2) + (3, 4))

***Answer***

(1, 2, 3, 4)

***Status :*** Correct ***Marks : 1/1***

15. Which of the following operators has its associativity from right to left?

***Answer***

**

***Status :*** Correct ***Marks : 1/1***

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## NeoColab_REC_CS23221_Python Programming

## REC_Python_Week 2_MCQ

Attempt : 1
Total Mark : 15
Marks Obtained : 10

### Section 1 : MCQ

1. What will be the output of the following Python code?

```
i = 0
while i < 5:
    print(i)
    i += 1
    if i == 3:
        break
else:
    print(0)
```

***Answer***

012

***Status :*** Correct ***Marks : 1/1***

2. What will be the output of the following Python code?

```
i = 1
while True:
    if i % 2 == 0:
        i += 1
        continue
    if i > 10:
        break
    print(i)
    i += 2
```

***Answer***

1 3 5 7 9 11

***Status :*** Wrong ***Marks : 0/1***

3. What will be the output of the following code snippet?

```
i = 0
while i < 5:
    if i % 2 == 0:
        i += 1
        continue
    print(i, end=" ")
    i += 1
```

***Answer***

1 3

***Status :*** Correct ***Marks : 1/1***

4. What will be the output of the following Python code?

```
i = 1
while True:
    if i%3 == 0:
        break
    print(i)
```

```
    i += 1
```

***Answer***

1 2

***Status :*** Correct ***Marks : 1/1***

5. What will be the output of the following Python code?

```
i = 1
while True:
    if i%3 == 0:
        break
    print(i)
    i + = 1
```

***Answer***

1 2

***Status :*** Wrong ***Marks : 0/1***

6. What will be the output for the following code snippet?

```
i = 0
for i in range(10):
    break
print(i)
```

***Answer***

0

***Status :*** Correct ***Marks : 1/1***

7. What is the output of the following code?

```
i = 5
while True:
    if i%0O9 == 0:
        break
```

```
    print(i)
    i += 1
```

***Answer***

5 6 7 8

***Status :*** Wrong ***Marks : 0/1***

8. What will the following code output?

```
x = 0
while x < 5:
    if x == 3:
        break
    x += 1
else:
    print("Completed")
print(x)
```

***Answer***

3

***Status :*** Correct ***Marks : 1/1***

9. What will be the output of the following Python code?

```
i = 5
while True:
    if i%0O11 == 0:
        break
    print(i, end = " ")
    i += 1
```

***Answer***

5 6 7 8 9 10

***Status :*** Wrong ***Marks : 0/1***

10. What will be the output of the following Python code?

```
i = 5
while True:
    if i%0O11 == 0:
        break
    print(i)
    i += 1
```

***Answer***

5 6 7 8 9 10

***Status :*** Wrong ***Marks : 0/1***

11. What is the output of the following?

```
True = False
while True:
  print(True)
  break
```

***Answer***

error

***Status :*** Correct ***Marks : 1/1***

12. What will be the output of the following code?

```
i = 1
while True:
    if i%0O7 == 0:
        break
    print(i)
    i += 1
```

***Answer***

1 2 3 4 5 6

***Status :*** Correct ***Marks : 1/1***

13. What will be the output of the following Python code?

```
i = 1
while False:
    if i%2 == 0:
        break
    print(i)
    i += 2
```

***Answer***

The code runs successfully but does not print anything

***Status :*** Correct ***Marks : 1/1***

14. What is the output of the following?

```
for i in range(10):
    if i == 5:
        break
    else:
        print(i, end=' ')
else:
    print("Here")
```

***Answer***

0 1 2 3 4

***Status :*** Correct ***Marks : 1/1***

15. Which keyword used in loops can skip the remaining statements for a particular iteration and start the next iteration?

***Answer***

continue

***Status :*** Correct ***Marks : 1/1***

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## NeoColab_REC_CS23221_Python Programming

## REC_Python_Week 3_MCQ

Attempt : 1
Total Mark : 25
Marks Obtained : 18

### Section 1 : MCQ

1. What is the output of the following Python code?

```
text = "   Python   "
answer = text.strip()
print(answer)
```

***Answer***

"Python "

***Status :*** Wrong ***Marks : 0/1***

2. If you have a list lst = [1, 2, 3, 4, 5, 6], what does the slicing operation lst[-3:] return?

***Answer***

The last three elements of the list

***Status :*** Correct ***Marks : 1/1***

3. What is the result of the slicing operation lst[-5:-2] on the list lst = [1, 2, 3, 4, 5, 6]?

***Answer***

[2, 3, 4]

***Status :*** Correct ***Marks : 1/1***

4. What is the output of the following Python code?

```
name = "John"
age = 25
message = "My name is %s and I am %d years old." % (name, age)
print(message)
```

***Answer***

My name is John and I am 25 years old.

***Status :*** Correct ***Marks : 1/1***

5. What is the output of the following Python code?

```
text = "Python"
result = text.center(10, "*")
print(result)
```

***Answer***

**Python**

***Status :*** Correct ***Marks : 1/1***

6. What does the following code output?

```
lst = [10, 20, 30, 40, 50]
```

print(lst[-4:-1])

***Answer***

[20, 30, 40]

***Status :*** Correct ***Marks : 1/1***

7. Which method in Python is used to create an empty list?

***Answer***

list()

***Status :*** Correct ***Marks : 1/1***

8. What is the output of the following Python code?

```
word = "programming"
answer = word.index("gram")
print(answer)
```

***Answer***

2

***Status :*** Wrong ***Marks : 0/1***

9. What is the output of the following code?

```
my_list = [3, 6, 1, 2, 5, 4]
print(sorted(my_list) == my_list.sort())
```

***Answer***

Error

***Status :*** Wrong ***Marks : 0/1***

10. Suppose list1 is [2, 33, 222, 14, 25], What is list1[:-1]?

***Answer***

25

***Status :*** Wrong ***Marks : 0/1***

11. What will be the output of the following program?

```
numbers = [1, 2, 3, 4, 5]
numbers.append(6, 7)
print(numbers)
```

***Answer***

Compile Time Error

***Status :*** Correct ***Marks : 1/1***

12. Which method is used to add multiple items to the end of a list?

***Answer***

extend()

***Status :*** Correct ***Marks : 1/1***

13. What is the output of the following Python code?

```
word = "Python"
result = word[::-1]
print(result)
```

***Answer***

nohtyP

***Status :*** Correct ***Marks : 1/1***

14. What will be the output of the following code?

```
my_list = [1, 2, 2, 3]
print(my_list.count(2))
```

***Answer***

2

***Status :*** Correct ***Marks : 1/1***

15. What is the output of the following Python code?

```
string1 = "Hello"
string2 = "World"
result = string1 + string2
print(result)
```

***Answer***

HelloWorld

***Status :*** Correct ***Marks : 1/1***

16. What will be the output of the following code?

```
numbers = [1, 2, 3, 4, 5]
numbers.remove(6)
print(numbers)
```

***Answer***

ValueError: list.remove(x): x not in list

***Status :*** Correct ***Marks : 1/1***

17. What is the output of the following code?

```
my_list = [1, 2, 3]
my_list *= 2
print(len(my_list))
```

***Answer***

3

***Status :*** Wrong ***Marks : 0/1***

18. Suppose list1 is [2, 33, 222, 14, 25], What is list1[-1]?

***Answer***

25

***Status :*** Correct ***Marks : 1/1***

19. What does negative indexing in Python lists allow you to do?

***Answer***

Access elements in the list from the end

***Status :*** Correct ***Marks : 1/1***

20. What does the append() method do in Python?

***Answer***

Adds a new element to the end of the list

***Status :*** Correct ***Marks : 1/1***

21. What is the output of the following Python code?

```
txt = "My Classroom"
print(txt.find("o"))
print(txt.index("o"))
```

***Answer***

Compile Time Error

***Status :*** Wrong ***Marks : 0/1***

22. What is the output of the following Python code?

```
a = "Hello"
b = "World"
c = a + " " + b
print(c)
```

***Answer***

Compile Time Error

***Status :*** Wrong ***Marks : 0/1***

23. What is the output of the following Python code?

```
b = "Projects!"
print(b[2:5])
```

***Answer***

oje

***Status :*** Correct ***Marks : 1/1***

24. Suppose list1 is [4, 2, 2, 4, 5, 2, 1, 0], Which of the following is the correct syntax for slicing operation?

***Answer***

all of the mentioned options

***Status :*** Correct ***Marks : 1/1***

25. Which of the following is a valid way to use the '%' operator to concatenate strings in Python?

***Answer***

"%s %s" % (string1, string2)

***Status :*** Correct ***Marks : 1/1***

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## NeoColab_REC_CS23221_Python Programming

## REC_Python_Week 4_MCQ

Attempt : 1
Total Mark : 15
Marks Obtained : 14

### Section 1 : MCQ

1. What will be the output of the following code?

```
value = 42
result = abs(value) + len(str(value))
print(result)
```

***Answer***

44

***Status :*** Correct ***Marks : 1/1***

2. What will be the output of the following Python code?

```
def cube(x):
    return x * x * x
```

```
x = cube(3)
print(x)
```

***Answer***

27

***Status :*** Correct ***Marks : 1/1***

3. What will be the output of the following code?

```
number = 7
result = abs(number) + pow(number, 2)
print(result)
```

***Answer***

56

***Status :*** Correct ***Marks : 1/1***

4. What will be the output of the following Python code?

```
multiply = lambda x, y: x * y
print(multiply(2, 'Hello'))
```

***Answer***

HelloHello

***Status :*** Correct ***Marks : 1/1***

5. What is the main advantage of using lambda functions in Python?

***Answer***

They allow you to write shorter code than regular functions

***Status :*** Correct ***Marks : 1/1***

6. What will be the output of the following Python code?

```
def absolute_value(x):
    if x < 0:
        return -x
    return x

result = absolute_value(-9)
print(result, absolute_value(5))
```

***Answer***

9 5

***Status :*** Correct ***Marks : 1/1***

7. What is the output of the following code snippet?

```
def fun(x, y=2, z=3):
    return x + y + z

result = fun(1, z=4)
print(result)
```

***Answer***

7

***Status :*** Correct ***Marks : 1/1***

8. What is the output of the code shown?

```
def f():
 global a
 print(a)
 a = "hello"
 print(a)
a = "world"
f()
print(a)
```

***Answer***

worldhellohello

***Status :*** Correct ***Marks : 1/1***

9. What will be the output of the following Python code?

```
def C2F(c):
   return c * 9/5 + 32
print(C2F(100))
print(C2F(0))
```

***Answer***

212.032.0

***Status :*** Correct ***Marks : 1/1***

10. What keyword is used to define a lambda function in Python?

***Answer***

lambda

***Status :*** Correct ***Marks : 1/1***

11. What will be the output of the following Python code?

```
def is_even(number):
   if number % 2 == 0:
      return True

result = is_even(6)
print(result)
```

***Answer***

True

***Status :*** Correct ***Marks : 1/1***

12. Which of the following functions can take a lambda function as a parameter in Python?

***Answer***

map()

***Status :*** Correct ***Marks : 1/1***

13. What is the output of the following code snippet?

```
def add(a, b=2):
    return a - b

result = add(3)
print(result)
```

***Answer***

1

***Status :*** Correct ***Marks : 1/1***

14. What will be the output of the following Python code?

```
def maximum(x, y):
    if x > y:
        return x
    elif x == y:
        return 'The numbers are equal'
    else:
        return y

print(maximum(2, 3))
```

***Answer***

The numbers are equal.

***Status :*** Wrong ***Marks : 0/1***

15. What will be the output of the following code?

```
def display(*args):
```

```
    for arg in args:
        print(arg)

display(10, 20, 30)
```

***Answer***

102030

***Status :*** Correct ***Marks : 1/1***

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## NeoColab_REC_CS23221_Python Programming

## REC_Python_Week 5_COD

Attempt : 1
Total Mark : 50
Marks Obtained : 40

## Section 1 : Coding

1. Problem Statement

Liam is analyzing a list of product IDs from a recent sales report. He needs to determine how frequently each product ID appears and calculate the following metrics:

Frequency of each product ID: A dictionary where the key is the product ID and the value is the number of times it appears.Total number of unique product IDs.Average frequency of product IDs: The average count of all product IDs.

Write a program to read the product IDs, compute these metrics, and output the results.

Example

Input:

6 //number of product ID

101

102

101

103

101

102 //product IDs

Output:

{101: 3, 102: 2, 103: 1}

Total Unique IDs: 3

Average Frequency: 2.00

Explanation:

Input 6 indicates that you will enter 6 product IDs.

A dictionary is created to track the frequency of each product ID.

Input 101: Added with a frequency of 1.

Input 102: Added with a frequency of 1.

Input 101: Frequency of 101 increased to 2.

Input 103: Added with a frequency of 1.

Input 101: Frequency of 101 increased to 3.

Input 102: Frequency of 102 increased to 2.

The dictionary now contains 3 unique IDs: 101, 102, and 103.

Total Unique is 3.

The average frequency is 2.00.

***Input Format***

The first line of input consists of an integer n, representing the number of product IDs.

The next n lines each contain a single integer, each representing a product ID.

***Output Format***

The first line of output displays the frequency dictionary, which maps each product ID to its count.

The second line displays the total number of unique product IDs, preceded by "Total Unique IDs: ".

The third line displays the average frequency of the product IDs. This is calculated by dividing the total number of occurrences of all product IDs by the total number of unique product IDs, rounded to two decimal places. It is preceded by "Average Frequency: ".

Refer to the sample output for formatting specifications.

***Sample Test Case***

Input: 6
101
102
101
103
101
102
Output: {101: 3, 102: 2, 103: 1}
Total Unique IDs: 3
Average Frequency: 2.00

***Answer***

```
# You are using Python
n = int(input())

freq = {}
for _ in range(n):
    pid = int(input())
    if pid in freq:
```

```
        freq[pid] += 1
    else:
        freq[pid] = 1

total_unique = len(freq)
average_freq = sum(freq.values()) / total_unique

print(freq, end=" ")
print("\nTotal Unique IDs:", total_unique, end=" ")
print("\nAverage Frequency: {:.2f}".format(average_freq))
```

***Status :*** Correct ***Marks : 10/10***

2. Problem Statement

Gowshik is working on a task that involves taking two lists of integers as input, finding the element-wise sum of the corresponding elements, and then creating a tuple containing the sum values.

Write a program to help Gowshik with this task.

Example:

Given list:

[1, 2, 3, 4]

[3, 5, 2, 1]

An element-wise sum of the said tuples: (4, 7, 5, 5)

***Input Format***

The first line of input consists of a single integer n, representing the length of the input lists.

The second line of input consists of n integers separated by commas, representing the elements of the first list.

The third line of input consists of n integers separated by commas, representing the elements of the second list.

***Output Format***

The output is a single line containing a tuple of integers separated by commas, representing the element-wise sum of the corresponding elements from the two input lists.

Refer to the sample output for the formatting specifications.

***Sample Test Case***

Input: 4
1, 2, 3, 4
3, 5, 2, 1
Output: (4, 7, 5, 5)

***Answer***

```
n = int(input())
list1 = list(map(int, input().split(',')))
list2 = list(map(int, input().split(',')))
result = tuple(list1[i] + list2[i] for i in range(n))
print(result)
```

***Status :*** Correct ***Marks : 10/10***

3. Problem Statement

Ella is analyzing the sales data for a new online shopping platform. She has a record of customer transactions where each customer's data includes their ID and a list of amounts spent on different items. Ella needs to determine the total amount spent by each customer and identify the highest single expenditure for each customer.

Your task is to write a program that computes these details and displays them in a dictionary.

***Input Format***

The first line of input consists of an integer n, representing the number of customers.

Each of the next n lines contains a numerical customer ID followed by integers representing the amounts spent on different items.

***Output Format***

The output displays a dictionary where the keys are customer IDs and the values are lists containing two integers: the total expenditure and the maximum single expenditure.

Refer to the sample output for formatting specifications.

***Sample Test Case***

Input: 2
101 100 150 200
102 50 75 100
Output: {101: [450, 200], 102: [225, 100]}

***Answer***

```
n = int(input())
data = input().split()
result = {}
i = 0
for _ in range(n):
    cid = int(data[i])
    i += 1
    amounts = []
    while i < len(data) and int(data[i]) < 101:
        amounts.append(int(data[i]))
        i += 1
    result[cid] = [sum(amounts), max(amounts)]
print(result)
```

***Status :*** Wrong ***Marks : 0/10***

4. Problem Statement

James is managing a list of inventory items in a warehouse. Each item is

recorded as a tuple, where the first element is the item ID and the second element is a list of quantities available for that item. James needs to filter out all quantities that are above a certain threshold to find items that have a stock level above this limit.

Help James by writing a program to process these tuples, filter the quantities from all the available items, and display the results.

Note:

Use the filter() function to filter out the quantities greater than the specified threshold for each item's stock list.

***Input Format***

The first line of input consists of an integer N, representing the number of tuples.

The next N lines each contain a tuple in the format (ID, [quantity1, quantity2, ...]), where ID is an integer and the list contains integers.

The final line consists of an integer threshold, representing the quantity threshold.

***Output Format***

The output should be a single line displaying the filtered quantities, space-separated. Each quantity is strictly greater than the given threshold.

Refer to the sample output for formatting specifications.

***Sample Test Case***

Input: 2
(1, [1, 2])
(2, [3, 4])
2
Output: 3 4

***Answer***

```
# You are using Python
N = int(input())
```

```
all_quantities = []

for _ in range(N):
    tup = eval(input())
    all_quantities.extend(tup[1])

threshold = int(input())
filtered = list(filter(lambda x: x > threshold, all_quantities))
print(*filtered)
```

***Status :*** Correct ***Marks : 10/10***

5. Problem Statement

Professor Adams needs to analyze student participation in three recent academic workshops. She has three sets of student IDs: the first set contains students who registered for the workshops, the second set contains students who actually attended, and the third set contains students who dropped out.

Professor Adams needs to determine which students who registered also attended, and then identify which of these students did not drop out.

Help Professor Adams identify the students who registered, attended, and did not drop out of the workshops.

***Input Format***

The first line of input consists of integers, representing the student IDs who registered for the workshops.

The second line consists of integers, representing the student IDs who attended the workshops.

The third line consists of integers, representing the student IDs who dropped out of the workshops.

***Output Format***

The first line of output displays the intersection of the first two sets, which shows the IDs of students who registered and attended.

The second line displays the result after removing student IDs that are in the third set (dropped out), showing the IDs of students who both attended and did not drop out.

Refer to the sample output for the formatting specifications.

***Sample Test Case***

Input: 1 2 3
2 3 4
3 4 5

Output: {2, 3}
{2}

***Answer***

```
r= set(map(int, input().split()))
a= set(map(int, input().split()))
d= set(map(int, input().split()))

a_r = r & a
f_s = a_r - d

print(a_r)
print(f_s)
```

***Status :*** Correct ***Marks : 10/10***