Tuple, List, Dict, Set

1) Write a program to display 5 tuple items and any one item access using index.

```
mytuple=("iphone","Mi","Vivo","Oneplus","Oppo")
print("Tuple content",mytuple)
print("Item at index 3 is",mytuple[3])
```

O/P:

Tuple content ('iphone', 'Mi', 'Vivo', 'Oneplus', 'Oppo')

Item at index 3 is Oneplus

2) Create a program for multidimensional list and access via loop.

```
ml=[
   [1,4,3,8],
   [2,3,7,1],
   [3,6,9,2,5,8]
]
for i in range(len(ml)):
   for j in range(len(ml[i])):
      print(ml[i][j],end=" ")
   print()
```

O/P:

1 4 3 8

2 3 7 1

3 6 9 2 5 8

3) Write a program add more items to sublist using extend() method.

```
mlist=[[1,2,3],[2,4,6],[3,6,9]]
print("Multi-dimensional list: ")
print(mlist)
mlist[0].extend([4,5,6])
print("\n Multi-dimensional list (after extend()):")
print(mlist)
```

O/P:

Multi-dimensional list:

[[1, 2, 3], [2, 4, 6], [3, 6, 9]]

Multi-dimensional list (after extend()):

[[1, 2, 3, 4, 5, 6], [2, 4, 6], [3, 6, 9]]

4) Write a program to sort the element for sublist any index position using sort method.

```
mlist=[[11,2,23],[2,14,9],[1,8,7]]
print("Multi-dimensional list: ")
print(mlist)
mlist[0].sort()
print("\n Multi-dimensional list (after sort()):")
print(mlist)
```

O/P:

Multi-dimensional list:

[[11, 2, 23], [2, 14, 9], [1, 8, 7]]

Multi-dimensional list (after sort()):

[[2, 11, 23], [2, 14, 9], [1, 8, 7]]

5) Create a program to count the occurrence of item using count() method.

```
mytuple=(4,1,2,5,4,1,8,4,8,4,3,)
print("Tuple: ",mytuple)
n=mytuple.count(4)
print("Total count of 4 in the tuple is: ",n)
```

O/P:

Tuple: (4, 1, 2, 5, 4, 1, 8, 4, 8, 4, 3)

Total count of 4 in the tuple is: 4

6) Write a program to traverse a set using loop.

```
myset={"iphone","Mi","Vivo","Oneplus","Oppo"}
print("All items in the set: ")
for item in myset:
    print(item)
```

O/P:

All items in the set:

iphone

Vivo

Oneplus

Oppo

Mi

7) Write a program to add numbers without using “+” operator.

```
num1=int(input("Enter any values"))
num2=int(input("Enter any values"))
add=num1-(-num2)
print("Addition is: ",add)
```

O/P:

Enter any values2

Enter any values3

Addition is: 5

8) Create a program to divide two numbers without using ”/” operator.

```
def divide(numerator,denominator):
    neg=0
    quotient=0
    if numerator==0 or denominator==0:
        return 0
    if numerator<0:
        numerator=-numerator
        neg=1
        if denominator<0:
            denominator=-denominator
            neg=0
    if denominator<0:
        denominator=-denominator
        neg=1
        if numerator<0:
            numerator=-numerator
            neg=0
    while numerator>=denominator:
```

```
        numerator-=denominator
        quotient+=1
    if neg==1:
        quotient=-quotient
    return quotient
num1=int(input("Enter 1st number"))
num2=int(input("Enter 2nd number"))
print("Division is ",divide(num1,num2))
```

O/P:

Enter 1st number4

Enter 2nd number2

Division is 2

9) Write a program without using ”%” operator but using if statement.

```
num1=int(input("Enter  1st value"))
num2=int(input("Enter 2nd value"))
q=num1//num2
if q<0:
    q=q+1
mod=num1-num2*q
print("Modulo division is: ",mod)
```

O/P:

Enter 1st value 5

Enter 2nd value 2

Modulo division is: 1

10) Create a program using lambda function to find greater number among 2 numbers.

```
x=(lambda n,m:(n>m and 'First' or 'Second'))
print(x(10,20),"number is greater")
```

O/P:

Second number is greater

11) Write a program for square and cube using function.

```
def  square(a):
   print("Square of",a, "is",(a*a))
def  cube(a):
   print("Cube of",a, "is",(a*a*a))
n=int(input("Enter a number: "))
square(n)
cube(n)
```

O/P:

Enter a number: 6

Square of 6 is 36

Cube of 6 is 216

12) Write a program to add two numbers using function.

```
def  add(a,b):
    return a+b
n1=int(input("Enter 1st number: "))
n2=int(input("Enter 2nd number: "))
ans=add(n1,n2)
print("Addition is ",ans)
```

O/P:

Enter 1st number: 34

Enter 2nd number: 15

Addition is 49

13) Write a program to print five mobile brand and OS in Nested dictionary.

```
laptop={
   "Brand":"MacBook",
   "os":"Mac OS"
}
mobile={
   "Brand":"iPhone",
   "os":"iOs"
}
Apple={
   "laptop":laptop,
   "mobile":mobile
}
print("Apple Products")
for x in Apple.items():
   print(x)
```

O/P:

Apple Products

('laptop', {'Brand': 'MacBook', 'os': 'Mac OS'})

('mobile', {'Brand': 'iPhone', 'os': 'iOs'})

14) Create a list with zero filled values.

```
r=4
c=3
```

```
mlist=[[0 for x in range(r)] for x in range(c)]
print("All items in multi-dimensional list:")
print(mlist)
```

O/P:

All items in multi-dimensional list:

[[0, 0, 0, 0], [0, 0, 0, 0], [0, 0, 0, 0]]

15) Write a program to access items using negative index range.

```
mylist=["c","c++","c#","Java","Python","Ruby","Kotlin"]
print("List Content : ",mylist)
print("Items in range[-5:-1] is",mylist[-5:-1])
```

O/P:

List Content : ['c', 'c++', 'c#', 'Java', 'Python', 'Ruby', 'Kotlin']

Items in range[-5:-1] is ['c#', 'Java', 'Python', 'Ruby']