AMRITSAR GROUP OF COLLEGES

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

B. Tech. (CSE2) 4th SEM

PROGRAMMING IN PYTHON (ACCS-16404)

ASSIGNMENT -1

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Total Marks :24

Section-A (6 Ques* 2 Marks=12)

Ques 1.

Ques a: How Python is considered as an interpreted language? [CO a]

Answer : An interpreted language reads your code line by line, and executes them as they are read. Python is actually converts your code into bytecode first (for example, .pyc), Python "interpreted", but you would know that they are not completely correct. Python code is not required to be built and linked like code for these languages.

Ques b : How to import and reload a module in Python? [CO a]

Answer : reloads a previously imported modules. This is useful if you have edited the module source file using an external editor and want to try out the new version without leaving the python interpreter. when the import is used, it searches for the module intially in the local scope by calling __import__() function.

ex- from math import pi , output:= 3.141592653589793.

Ques c: Given input: ['static', 'madamimadam', ' ', 'cseesc', 'eyes'].

WAP to check whether the given strings in a list is palindrome or not. [CO b]

Answer :

```
def palindrome(s):
    return s==s[::-1]
S = ['static', 'madamimadam', ' ', 'cseesc', 'eyes']
```

```
ans = palindrome(s)
if ans:
    print("yes")
else:
    print("no")
```

output: no

Ques d: Why we use dictionary in Python? [CO c]

Answer : Dictionaries are used to store data values in key: value pairs. A dictionary is a collection which is ordered*, changeable and do not allow duplicates.

Ques e: Create a dictionary comprehension to print the marks of only those students who scored less than 50 percent and the marks are not even

Provided dictionary: {"John: 33", "Ray": 56, "Charlie": 78} **[CO c]**

Answer :

```
d = {'John:33','Ray':56,'charlie':78}
x = {k:v for (k,v) in d.items() if v%2!=0
                    and v<50}
print(x)
```

OUTPUT:- {'John':33}

Ques f: Create code to print the following output on your idle shell by using the string

S= "Computer"

S= ['C', 'o', 'm', 'p', 'u', 't', 'e', 'r']

S= ('C', 'o', 'm', 'p', 'u', 't', 'e', 'r')

S= 'C*o*m*p*u*t*e*r'

Answer : **[CO b]**

```
S="Computer"
(i) print(list('computer'))
(ii) print(tuple(s))
(iii) print('*'.join(s))
```

Section-B (3 Ques* 4 Marks=12)

Ques 2: Differentiate between List, Tuple, Sets and Strings [CO b]

Answer: There are many differentiate between List, Tuple, Sets and Strings.

List:- (i) The list is a datatype available in python which can be written as a list of comma-separated values between square brackets. (ii) List are mutable. ie it can be converted into another data type and can store any data element it. (iii) Lists can store any type of element. (iv) Lists is mutable.

Tuple:- (i) Tuple is an immutable squence in python. (ii) It cannot be changed or replaced since it is immutable. (iii) It is defined under parenthesis (). (iv) Tuples can store any type of element. (v) Items in tuple cannot be changed or replaced.

Set:- (i) set are an unordered collection of elements or unintended collection of item In python. (ii) Here the order in which the elements are added into the set is not fixed, It can changes frequently. (iii) It is defined under curly braces{}. (iv) Set are mutable, however, only immutable objects can be stored in it.

Strings:- (i) string is an immutable sequence data type. (ii) It is the sequence of unicode characters wrapped inside single, double or triple quotes. (iii) use the len() function to retriere the length of a string. (iv) String is an ordered collection of characters.

Ques 3: Explain functions and its types available in python. Write a program of calculator to show usage of all categories of function. [CO a]

Answer: Function is a block of related statement designed to perform a computational, logical or evaluative task. Function blocks begin with the keyword def followed by the function name and parentheses (). There are two types of functions :-

(i) user-defined function (ii) Built-in-function.

(i) User-defined function :- A function is a set of statement that take inputs, do some specific computation and produce output. and 'def' keyword is used to declare user-defined function.

Program :-

```
def fun():
    print("Inside function")
```

output :- Inside function.

(ii) Built-in-function :- Built-in-function are defined as the functions whose functionally is pre-defined in python. The python interpreter has several functions that are always present for use.

Program :-

```
integer = -20
print('Absolute value of -40 is:', abs(integer))
floating = -20.83
print('Absolute value of -40.83 is:', abs(floating))
```

OUTPUT :- Absolute value of -20 is: 20

Absolute value of -20.83 is: 20.83

Calculator program:-

```
def add(a,b):
 return a+b
def sub(a,b):
 return a-b
def mul(*m):
  mul=1
 for i in m:
 mul=1
for i in m:
mul*=i
 return mul
def div(a,b=1):
  return a/b
  while true:
  print('1+\n2-\n3*\n 4\')
   print('Enter your choice: ')
    choice = int(input())
     if choice ==1:
     print('Addition is', add)
 else:
       x,y = eval(input()).split()
        if choice ==2:
       Print('Subtraction is', sub(x,y))
      if choice == 3:
       print('multiplication is', mul(x,y))
      if choice == 4:
         print('divide is', div(x,y))
  else:
       print('cannot do any other calculation')
      print('DO you want to continue')
      d=input()
    if d=='yes': continue
```

OUTPUT:-

```
1+
2-
3*
4/
Enter your choice
2
2
3
Subtraction is -1
```

Ques 4: Differentiate between append and list in Python. [CO c]

Let list1=[1,2,3,4, 'hello',4,3,] and list2=[6,7,8,9]

a) Find the length of given list

b) Append the word 'Computer' by using append method.

c) The word 'Engineer' at index 2 by using insert method.

d) Calculate the frequency of occurrence of 3 and 4 in list1.

e) Find the minimum and maximum element of list2.

f) Remove the element at index [0] of list2.

g) Reverse the content of list1.

h) Sort the content of list2.

i) Delete the list2.

Answer:

append	Extend
• It adds an element at the end of the list.	This method append each element of iterable c tuple String are list to end of list.
• No of arguments passed in append in one. i.e - single element is added at end of list.	iterables added at the end of list.
• Syntax: list_name append (element)	Syntax: list_name. extend (iterables)
• Eg:- l=['hi'] l.append('there') l.append('1') print (i) ['hi', 'there', '1']	Eg:- l=['hello', 1,2] l. extend ([3,4,5]) Print (l) ['hello', 1,2,3,4,5]

⇒ list1 = [1,2,3,4,'Hello',4,3] list2 = [6,7,8,9]

(i) print [len(list1)] output = 7

print [len (list2)] output = 4

(ii) b.append('computer')
Print(b)
output ⇒ [6,7,8,9,'Computer']
a.append('Computer')
Print(a)
output = [1,2,3,4,'hello',4,3,'Computer']

(iii) a.insert(2,'Engineer')
b.insert(2,'Engineer')
Print(a)
Print(b)
OUTPUT:→ [1,2,'Engineer',3,4,'hello',4,3]
→ [6,7,'Engineer',8,9]

(iv)
```
a=0
b=0
for i in list1:
    if i=3:
        a=a+1
    if i=4:
        b=b+1
Print(a)
Print(b)
```
OUTPUT ⇒ 2
2

(v) print(min(list2))
print(max(list2))
OUTPUT:→ 6
9

(vi) del list2[0]
print (list2)
OUTPUT → [7,8,9]

(vii) print (list1[::-1])
OUTPUT :→ [3,4,'hello',4,3,2,1]

(viii) Print (sorted (list2))
OUTPUT :→ [6,7,8,9]

(ix) del list2