L. J. UNIVERSITY

L.J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD

ASSIGNMENT

B.E. SEMESTER-III BRANCH: CE/IT/CSD/AIML/AIDS/RAI/CSE

SUBJECT- FUNDAMENTALS OF COMPUTER SCIENCE USING PYTHON - I

SUBJECT CODE: 017012391/ 017022391/ 017032391/ 017042391/ 017052391/ 017062391/ 017122391

1	What will be the output of the following Python code snippet? numbers = {} letters = {} comb = {} numbers[1] = 56 numbers[3] = 7 letters[4] = 'B' comb['Numbers'] = numbers comb['Letters'] = letter print(comb) (A). 'Numbers': {1: 56, 3: 7} (B). {'Numbers': {1: 56}, 'Letters': {4: 'B'}} (C). {'Numbers': {1: 56, 3: 7}, 'Letters': {4: 'B'}} (D). comb (E). {'Numbers': {3: 7}, 'Letters': {4: 'B'}} (F). No Output (G). Error	**[0.5]**
2	What will be the output of the following Python code? D = {1 : 1, 2 : '2', '1' : 2, '2' : 3} D['1'] = 2 print(D [D [D [str(D[1])]]]) (A). Key Error (B). Syntax Error (C). 1 (D). 3 (E). 2 (F). Index Error (G). No Output	**[0.5]**
3	What will be the output of the following Python code? L1 = [ ] L1.append([1, [2, 3], 4]) L1.extend([7, 8, 9]) print(L1[0][1][1] + L1[2]) (A). 12 (B). 11 (C). 38 (D). Error (E). [12] (F). [11] (G). [38]	**[0.5]**
4	What will be the output of the following Python code? i=0 def change(i): i=i+1 return i change(1) print(i) (A). 2 0 (B). None 0 (C). 2 (D). 2 2 (E). Error (F). No Output (G). 0	**[0.5]**
5	What will be the output of the following Python code? def change(i = 1, j = 2): i = i + j j = j + 1	**[0.5]**

	print(i, j) change(j = 1, i = 2) (A). 3 2 (B). 1 2 (C). 3 3 (D). 2 1 (E). Error (F). 2 2 (G). i j	
6	What will be the output of the following Python code? a=[1,2,3] b=a.append(4) print(a) print(b) (A). [1,2,3,4] (B). None (C). [1,2,3,4] (D). [1,2,3] [1,2,3,4] [1,2,3,4] None [1,2,3,4] (E). [1,2,3,4] (F). [1,2,3] (G). Error 4 [4]	**[0.5]**
7	What will be the output of the following Python code? def func(): global value value = "Local" value = "Global" func() print(value) (A). Local (B). Error (C). Local (D). Global Global Local (E). No Output (F). Global (G). value	**[0.5]**
8	What will be the output of the following Python code? a=10 b=20 def change(): global b a=45 b=56 change() print(a) print(b) (A). Syntax Error (B). 45 (C). 45 (D). 10 56 20 56 (E). 10 (F). 45 (G). No Output 20 10	**[0.5]**
9	What will be the output of the following Python code? def tup(T): print(T[T.index(5)], end = " ") print(T[T[T[6]-3]-6]) T = (1, 2, 3, 4, 5, 6, 7, 8) tup(T) (A). 4 0 (B). 5 Index Error (C). Syntax Error (D). 4 Index Error (E). 5 8 (F). 5 7 (G). 4 8	**[0.5]**
10	What will be the output of below Python code? list1=[1,3,5,2,4,6,2] list1.remove(2) print(sum(list1)) (A). 16 (B). 21 (C). 24 (D). 18 (E). 22 (F). 20 (G). Error	**[0.5]**
11	What will be the output of the following Python code? L1 = [1, 1.33, 'LJU', 0, 'N', True, 'Y', 1]	**[01]**

	val1= 0
	val2= ""
	for x in L1:
	  if(type(x) == int or type(x) == float):
	  val1 += x
	  elif(type(x) == str):
	  val2 += x
	  else:
	  break
	  continue
	print(val1, val2)
	(A). 2.33 LJU (B). 3.33 LJU (C). 3.33 LJUNY (D). 2.33 LJUN
	(E). Error (F). 3.33 LJUN (G). 3.33 LJUNTrueY	

12	What will be the output of the following Python code? D = {1 : [1, 2, 3], 2: (4, 6, 8)} D[1].append(4) print(D[1], end = " ") L = [D[2]] L.append(1) D[2]=L L.pop(1) print(D[2]) (A). [1, 2, 3, 4] [(4, 6, 8),10] (B). [1, 2, 3, 4] [(4, 6, 8)] (C). [1, 2, 3, 4] [4, 6, 8] (D). [1, 2, 3, 4] [4, 6, 8,10] (E). [1,2,3,4] Error (F). Error (G). (1,2,3,4) (4,6,8,10)	**[01]**

13	What will be the output of the following Python code?
	def sum_list(l):
	  sum=0
	  for i in range(len(l)):
	  if l[i]==13 or l[i-1]==13:
	  continue
	
	  else:
	  sum+=l[i]
	  return sum
	l= [1,2,13,2,9,13]
	print(sum_list(l))
	(A). 12 (B). 14 (C). 40 (D). 27
	(E). 9 (F). 11 (G). 23
		[01]

14	What will be the output of the following Python code? s="Th*is is$ nothi&&ng b#ut excerc(is)e" change=str.maketrans("(",",","@#$%^&*_-)") s.translate(change) print(s) (A). Th*is is$ nothi&&ng b#ut excerc(is)e (B). This is nothing but excerc,ise (C). This is nothing but excercise (D). NameError: name 'str' not defined (E). Syntax Error (F). This is nothing but excerc(is)e (G). No Output	**[01]**
15	What will be the output of the following Python code?	**[01]**

	L1= [1,1,2,4,5,6,2,3,1,3,5] L2= [8,2,1,3,8,3,7,2,0] L=L1+L2 S=list(set(list(L))) S.sort() S.reverse() S.sort() L.reverse() print(S) (A). [1, 1, 2, 4, 5, 6, 2, 3, 1, 3, 5, 8, 2, 1, 3, 8, 3, 7, 2, 0] (B). [8, 7, 6, 5, 4, 3, 2, 1, 0] (C). [0, 2, 7, 3, 8, 3, 1, 2, 8, 5, 3, 1, 3, 2, 6, 5, 4, 2, 1, 1] (D). Error (E). [0, 1, 1, 1, 1, 2, 2, 2, 2, 3, 3, 3, 3, 4, 5, 5, 6, 7, 8, 8] (F). [1,1,2,4,5,6,2,3,1,3,5] (G). [0, 1, 2, 3, 4, 5, 6, 7, 8]	
16	What will be the output of this program? numbers = {} letters = {} comb = {} numbers[1] = 56 numbers[3] = 7 letters[4] = 'B' comb['Numbers'] = numbers comb['Letters'] = letters print(comb) A) error B) 'Numbers': {1: 56, 3: 7} C) {'Numbers': {1: 56}, 'Letters': {4: 'B'}} D) 10.0 E) {'Numbers': {1: 56, 3: 7}, 'Letters': {4: 'B'}} F) {'Letters': {4: 'B'}, 'Numbers': {1: 56, 3: 7}} G) {'Letters': {4: 'B'}, 'Numbers': {1: 56}}	**[0.5]**

17	What will be the output of the following Python code?
	names1 = ['Amir', 'Bear', 'Charlton', 'Daman']
	names2 = names1
	names3 = names1[:]
	names2[0] = 'Alice'
	names3[1] = 'Bob'
	sum = 0
	for ls in (names1, names2, names3):
	  if ls[0] == 'Alice':
	  sum += 10
	  if ls[1] == 'Bob':
	  sum += 1
	print(sum)
	A) 11 B) 12 C) 20 D) 21 E) 22 F) 10 G)none of these
		[0.5]

18	What will be the output of this python code? keys = ('id', 'age', 'perc') value = (0,1,2) x = dict.fromkeys(keys, value)	**[0.5]**

	print(x) A) {'perc': 0, 'id': 0, 'age': 0} B) ['perc': 0, 'id': 0, 'age': 0] C) {id: (0, 1, 2), age: (0, 1, 2), perc: (0, 1, 2)} D) {'perc': '0', 'id':' 0', 'age': '0'} E) {'id': (0, 1, 2), 'age': (0, 1, 2), 'perc': (0, 1, 2)} F) {perc: 0, id: 0, age: 0} G) ['id': (0, 1, 2), 'age': (0, 1, 2), 'perc': (0, 1, 2)]	
19	Which of the following two Python codes will give same output? tupl= (5,3,1,9,0) (i) print(tupl[:-1]) (ii) print(tupl[0:5]) (iii) print(tupl[0:4]) (iv) print(tupl[-4:]) A) i and ii B) i and iii C) i and iv D) ii and iii E) ii and iv F) iii and iv G) None of these	**[0.5]**

20	What will be the output of the following Python code?
	def function1(var1=5, var2=7):
	  var2=9
	  var1=3
	  print (var1, " ", var2)
	function1(11,12)
	A) 5 7 B) 3 9 C) 10 11 D) 11 12 E) 7 5 F) error G) none of these
		[0.5]

21	What will be the output of the following Python code?
	def function1(var1,var2=5):
	  var1=2
	  var3=var1*var2
	  return var3
	var1=3
	print(function1(var1,var2))
	A) 10 B) 3 C) 2 D) 5 E) error name 'var2' is not defined F) error name 'var3' is not defined G)None of these
		[0.5]

22	What will be the output of the following program on execution? a= {4,5,6} b= {2,8,6} c= {4,5,2,8} print(a-b+c) A) {6} B) Error as unsupported operand type for set data type C) Immutable data type D) {2,4,5,6,8} E) {4,5} F) {4,5,2,8} G) {2,8}	**[0.5]**
23	What will be the output of the following Python code? a={} a[2]=1	**[0.5]**

	a[3]=[2,3,4] print(a[3][1]) A) [2,3,4] B) 3 C) 2 D) 1 E) 4 F) error G) none of these	
24	What is the output from the following code? li = [5, 14, 22, 97, 98, 62, 77, 23, 73, 100] final_list = list(filter(lambda x: (x//2 and 2/4 ==True), li)) print(final_list) A) [5, 14, 22, 97, 98, 62, 77, 23, 73, 100] B) [14, 22, 98, 62,100] C) [5, 97 77, 23, 73] D) [5, 14, 22, 97, 98, 62, 77, 23] E) [98, 62, 77, 23, 73, 100] F) error G) []	**[0.5]**
25	Suppose list1 is [21, 33, 222, 14, 25] What is list1[::-2]? A) [21, 33, 222, 14, 25] B) [25, 14, 222, 33, 21] C) [25, 14, 222, 33] D) [21, 33, 222, 14] E) [14, 222, 33, 21] F) [33, 222, 14, 25] G) [25, 222, 21]	**[0.5]**
26	What are the output of the following Python program? x="This is-- ,the python 3.0!!" y="-!" z=". " o=x.maketrans(y,z) print(x.translate(o)) A) This is the python 30 B) This is.. the python 3.0 C) This is ,the python 3.0 D) This is.. ,the python 3.0 E) This is ,the python 30 F) error G) none of these	**[0.5]**
27	What will be the output of this program? a=["india","canada", "US", UK] x=" ".join(a) print(x) A) india canada US UK B) india-canada-US-UK	**[0.5]**

	C) india Canada UK D) india:canada:US:UK E) india.canada.US.UK F) error G) none of these	

28	What will be the output of this program?
	def temp(x):
	  if x%2==0:
	  return True
	  else:
	  return False
	l=[0,5,10,15,20,25,30]
	l1=list(filter(temp,l))
	print(l1)
	
	A) True
	B) False
	C) [0,5,10,15,20,25,30]
	D) [0, 10, 20, 30]
	E) [0,5,10,20,30]
	F) error
	G) []
		[0.5]

29	What will be the output of this program?
	
	def test(nums):
	  result = [sum(x) / len(x) for x in nums]
	  return result
	
	nums = ((10, 10, 10, 12), (30, 45, 56, 45), (81, 80, 39, 32), (1, 2, 3, 4))
	print(test(nums))
	
	A) error
	B) ((10, 10, 10, 12), (30, 45, 56, 45), (81, 80, 39, 32), (1, 2, 3, 4))
	C) ((10, 10, 10), (30, 45, 56), (81, 80, 39), (1, 2, 3))
	D) 28.75
	E) [28.75]
	F) [10.5, 44.0, 58.0, 2.5]
	G) none of these
		[0.5]

30	What will be the output of this program?
	
	def f1(x):
	  global x
	  x+=1
	  print(x)
	f1(15)
	print("hello")
	
	A) 15
	B) 16
	C) 16
	  hello
	D) 15
		[0.5]

	hello E) error F) hello G) none of these	
31	What will be the output of this program? d={1:10,2:10,3:239} tot=1 for i in d: tot=tot*i print(tot) A) 23900 B) 2390 C) 2 D) 6 E) 3 F) error G) None of these	**[0.5]**
32	What will be the output of this? print('Hello!2@#world'.capitalize()) A) 'Hello!2@#World' B) 'Hello!2@#world' C) 'HelloWorld' D) False E) True F) error G) None of these	**[0.5]**
33	What will be the output of this program? my_string="exam" k = list(filter(lambda x:x not in "aeiou",my_string)) print(k) A) string is immutable data structure B) ‘exam’ C) ‘ x m’ D) ['x', 'm'] E) ['e', 'x', 'a', 'm'] F) error G) None of these	**[0.5]**
34	What will be the output of this program? l= [1, 2, 3, 4, 5, 6, 7, 8, 9] print([x**2 for x in l if x//3==0]) A) [9, 36, 81] B) [36, 81] C) [1, 4] D) [1, 4, 6] E) [1, 2, 3, 4, 5, 6, 7, 8, 9] F) error G) None of these	**[0.5]**

35	What will be the output of following program? a=frozenset(set([5,6,7])) print(a) A) {5, 6, 7} B) (5, 6, 7) C) 5,6,7 D)frozenset({5, 6, 7}) E) [5,6,7] F) error G) none of these	**[0.5]**
36	What will be the output of the following Python code? str1="hello world" str1[::-1] a) hello b) hello world c) "hello world" d) "hello" e) dlrow olleh f) world g) dlrow	**[0.5]**
37	Which of the following is a Python tuple? a) (hello) b) set() c) Frozentuple() d) {} e) [1, 2, 3] f) (1, 2, 3) g) {1, 2, 3}	**[0.5]**
38	To insert 5 to the third position in list1, we use which command? a) list.update(3,5) b) list1.pop(3,5) c) list1.add(3) d) list1.add(3, 5) e) list1.insert(3, 5) f) list1.insert(2, 5) g) list1.append(5)	**[0.5]**
39	Suppose list1 is [3, 4, 5, 20, 5, 25, 1, 3], what is list1.count(5)? a) 8 b) 5 c) 3 d) 4 e) 0 f) 1 g) 2	**[0.5]**
40	What is the output of the following function call? def fun1(name, age=20): print(name, age) fun1('Emma', 25) a) Emma 25 b) Emma 20 c) "Emma" 25 d) Emma, 25 e) 'Emma'- 20 f) 'Emma'- 25 g) "Emma" 20	**[0.5]**
41	What is a variable defined inside a function referred to as? a) A global b) A volatile c) Private d) A local variable e) builtones f) automatic g) Static	**[0.5]**

42	How many times will print() execute in the code given below?
	
	def display():
	  print('a')
	  print('b')
	  return
	print('c')
	print('d')
	
	a) 1 b) 2 c) 3 d) 4
	e) 5 f) 6 g) 7
		[01]

43	If number of arguments in function definition and function call does not match, then which type of error is returned? a) NameError b) ImportError c) funError d) ImpError e) TypeError f) NumberError g) StaticError	**[01]**
44	When using find(), If str is not present in string then what is returned? a) 0 b) -1 c) n d) n-1 e) 1 f) ValueError g) NameError	**[01]**
45	Which error is generated when a character in a string variable is modified? a) NameError b) ImportError c) funError d) ImpError e) TypeError f) NumberError g) StaticError	**[01]**
46	Which data structure does not allow duplicate values? a) List b) Set c) Tuple d) Dictionary e) stack f) array g) reduce	**[01]**
47	What is the output of following python code – m = (1,[1,2],3,4) m[1][1] = 5 type(m) a) List b) Set c) Tuple d) Dictionary e) stack f) type g) Error	**[01]**
48	What is the output of following python code –	**[01]**

	dict = {1: 2, 3:4, 4:11, 5:61, 7:81} print(dict[dict[3]]) a) 2 b) 4 c) 11 d) 61 e) 81 f) 3 g) 5	
49	What will be the output of the following Python code? x = ['ab', 'cd'] for i in x: i.upper() print(x) (A) [‘AB’, ‘CD’] (B) ['ab','cd'] (C) [None, None] (D) value error (E) syntax error (F) [‘A’, ‘B’, ‘C’, ‘D’] (G) None of the mentioned	**[0.5]**
50	What will be the output of the following Python code? x = 50 def func(): global x print('x is', x) x = 2 print('Changed global x to', x) func() print('Value of x is', x) (A) x is 50 Changed local x to 2 x is now 50 (B) x is 50 Changed local x to 2 x is now 2 (C) x is 50 Changed local x to 2 x is now 100 (D) value error (E) type error (F) x is 50 Changed local x to 50 x is now 2 (G) None of the mentioned	**[0.5]**
51	What will be the output of the following Python code? x = 50 def func(x): print('x is', x) x = 2 print('Changed local x to', x) func(x) print('x is now', x) (A) x is 50 Changed local x to 2 x is now 50 (B) x is 50 Changed local x to 2 x is now 2 (C) x is 50 Changed local x to 2 x is now 100 (D) value error (E) type error (F) x is 50 Changed local x to 50 x is now 2 (G) None of the mentioned	**[0.5]**
52	What will be the output of the following Python code? def writer(): title = 'Sir'	**[0.5]**

	name = (lambda x: title + ' ' + x) return name who = writer() print(who('Arthur')) (A) Arthur Si (B) Arthur Sir (C) Sir Arthur (D) "None" is printed (E) Sir (F) " Arthur " (G) None of the mentioned	

53	What will the following code print?
	def mystery(num_list):
	out = []
	for num in num_list:
	if num > 10:
	out.append(num)
	return out
	print(mystery([5, 10, 15, 20]))
	
	(A) [5, 10, 15, 20] (B) [10, 15, 20] (C) [5, 10, 15] (D) [15, 20]
	(E) [20] (F) [] (G) None of the mentioned
		[0.5]

54	Guess the correct output of the following code? str1 = "LJIET" print(str1[1:4], str1[:5], str1[4:], str1[0:-1], str1[:-1]) (A) JIE LJIET T LJIET LJIET (B) JIE LJIET T LJI LJI (C) JIE LJIET T LJIE LJI (D) JIE LJIET T LJIE LJIT (E) index error (F) JIE LJIET T LJIE LJIE (G) None of the mentioned	**[0.5]**
55	What will be the output of the following Python code? s="aa" s.strip("a") print(s) (A) False (B) "a" (C) "aa" (D) "aa a" (E) error (F) True (G) None of the mentioned	**[1]**
56	What will be the output of the following Python code? s=[{1,2,3},{3,2,1}] s[0]==s[1] (A) False (B) {1,2,3} (C){false} (D) {true} (E) index error (F) True (G) None of the mentioned	**[1]**
57	What will be the output of the following Python code? l=[["hello","0hel"],"bh"],"nm"] print(l[0])	**[1]**

	(A)[['hello', '0hel']] (B) [['hello', '0hel'], bh'] (C) [['0hel'], 'bh'] (D) [['hello'], 'bh'] (E) index error (F) [['hello'] (G) None of the mentioned	
58	What will be the output of the following Python code? s="1234ABCvhghbbv" v=s.maketrans("abc","vvv") print(s.translate(v)) (A) ABCvhghvvv (B) 1234vhghvvv (C) vvv (D) 1234ABCvhghvvv (E) 1234ABCvhg (F) error (G) None of the mentioned	**[1]**

59	What will be the output of the following Python code?
	names1 = ['A', 'B', 'C', 'D']
	names2 = names1
	names3 = names1[:]
	names2[0] = 'Aa'
	names3[1] = 'BB'
	sum = 0
	for s in (names1, names2, names3):
	if s[0] == 'Aa':
	sum += 2
	if s[1] == 'BB':
	sum += 20
	print(sum)
	(A) 24 (B) 11 (C) 12 (D) 13
	(E) indentation error (F) 14 (G) 22
		[1]

60	t=((1,2),9,(5,[3,["x","y"]])) What will be code for print ['x','y'] (A) t[2][1] (B) t[2] (C) t[2][1][1] (D) t[1] (E) t[1][1][1] (F) t[1][1] (G) None of the mentioned	**[1]**

61	What will be the output of the following Python code?
	def F(B,A=3,*C,**D):
	sum=A+B
	for i in C:
	sum=sum+i
	for i in D.values():
	sum=sum+i
	return sum
	print(F(1,5,7,4,3,e=1,f=2))
	(A) 10 (B) 20 (C) 23 (D) 7
		[1]

	(E) 14 (F) 1 (G) 21	

62	**What will be the output of the following code?**
	
	wi =20
	fi=56
	def change():
	  global fi
	  wi= 56
	  fi= 10
	change()
	print ('WI:', wi)
	print ('FI:', fi)
		[01]

(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)**
a : 20 b: 56	a : 20 b: 10	a : 56 b: 56	a : 56 b: 10	a : 20 b: 56	a : 10 b: 10	a : 20 b: 20

63	**Which of the following two Python codes will give same output?** neo =('O','R','B','I','T') (i) print(neo[:-1]) (ii) print(neo[0:4]) (iii) print(neo[0:5]) (iv) print(neo[-4:])	**[01]**

(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)**
(i), (ii)	(ii), (iii)	(iii), (iv)	(iv), (i)	(i), (iii)	(ii), (iii)	(ii), (iv)

64 **What will be the output of the following code?** **[01]**

```
ship = 'FriGate'
sail = ship.swapcase()
print(sail)
```

(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)**
FRIGATE	friGATE	FRIgate	frigate	Frigate	fRIGATE	fRIgATE

65 **What will be the output of the following code?** **[01]**

```
dong = ('shom','shom','shamo','sha','sha','dong')
mong = dong[1][:-1]
print(tuple(mong ))
```

(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)**
don	('s', 'h', 'o')	('d', 'o', 'n')	sho	sha	dong	Error

66 **What will be the output of the following code?** **[01]**

```
a={5,4}
b={'1','2',4,5}
print(a<b)
```

(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)**
None	{‘False’}	{‘True’}	{1,2}	{5,4}	True	False

67 **What will be the output of the following code?** **[01]**

```
fish1 = {1:'GR', 2:'PI'}
```

	fish2 = {3:'SC', 4:'CA'} fish2.update(fish1) fish1.update(fish2) print(fish1)	

(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)**
{1: 'GR', 2: 'PI'}	{3: 'SC', 4: 'CA'}	{1: 'GR', 2: 'PI', 3: 'SC', 4: 'CA'}	{3:'SC', 4:'CA' 1:'GR', 2:'PI'}	{1: 'SC', 2: 'CA', 3: 'GR', 4: 'PI'}	{1: 'GR', 2: 'PI', 3: 'SC', 4: 'CA', 1: 'GR', 2: 'PI'}	error

68 **What will be the output of the following code?** **[01]**

```
breed = 'BORZOI'
cut = breed.lstrip('BOI')
show = cut.find('ZI')
print(cut)
print(show)
```

(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)**
No output	RZOI -1	RZ 3	RZI 3	RZOI IndexError	BOI -1	BRZ 0

69 **What will be the output of the following code?** **[01]**

```
def all(*n, s):
    print(n)
    sum = 0
    for i in n:
```

```
        sum += i
    return sum
print( all(10, s = -10))
```

(a)	(b)	(c)	(d)	(e)	(f)	(g)
(10) 10	(10,) 10	(10) 0	(10,) 0	10 10	0 10	error

70 **What will be the output of the following code?** **[01]**

```
toll = (('f','a','s','t'),['t','a','g'],'Q','R')
toll[1][2] = 50
print(toll[1])
```

(a)	(b)	(c)	(d)	(e)	(f)	(g)
('t', 'a', 50)	50	('t', 'a', '50')	['t', 'a', '50']	['t', 'a', 50]	g	error

71 **What will be the output of the following code?** **[01]**

```
def dog(**d):
    for key, value in d.items():
        print(key, 'is', value)

dog(D ="Den", A = 'Sw' )
```

(a)	(b)	(c)	(d)	(e)	(f)	(g) error
D is Den A is Sw	Den is D Sw is A	D:Den A: Sw	Den: D Sw: A	Den Sw	D: A Den: Sw	

72	What will be the output of the following Python code?
	def power(x, y=2):
	  r = 1
	  for i in range(y):
	  r = r * x
	  return r
	print(power(3,3))
	
	(a) 3
	(b) 22
	(c) 23
	(d) 18
	(e) 9
	(f) 26
	(g) 27
		[01]

73	What will be the output of the following Python code?
	a=10
	b=20
	def change():
	  global b
	  a=45
	  b=56
	change()
	print(b)
	(a) 10
	(b) 20
	(c) 45
	(d) 56
	(e) 30
	(f) 65
	(g) Error
		[01]

74	What will be the output of the following Python code? def C2F(c): return c * 9/5 + 32 print(C2F(100)) (a) 212.0 (b) 220 (c) 32.0 (d) 98 (e) 95.0 (f) 215.0 (g) 218	**[01]**

75	What will be the output of the following Python code?
	def f(p, q, r):
	  global s
	  p = 10
	  q = 20
	  r = 30
	  s = 40
	  print(p,q,r,s)
	p,q,r,s = 1,2,3,4
	f(5,10,15)
	(a) 1 2 3 4
		[01]

	(b) 10 20 30 4 (c) 10 20 30 40 (d) 1 2 3 40 (e) 5 10 15 4 (f) 5 10 15 40 (g) 5 10 15	
76	Which of the following will give "Simon" as output? str1="John,Simon,Aryan" (a) print(str1[-7:-12]) (b) print(str1[-11:-7]) (c) print(str1[-11:-5]) (d) print(str1[-7:-11]) (e) print(str1[5:9]) (f) print(str1[-11:-6]) (g) print(str1[5:11])	**[01]**
77	What will be the output of the following program? tuple = {} tuple[(1,2,4)] = 8 tuple[(4,2,1)] = 10 tuple[(1,2)] = 12 _sum = 0 for k in tuple: _sum += tuple[k] print(len(tuple) + _sum) (a) 22 (b) 30 (c) 33 (d) 31 (e) 32 (f) 0 (g) 3	**[01]**
78	What is the output of the following program? L = list('123456') L[0] = L[5] = 0 L[3] = L[-2] L[5]=1 L[-2]=4 L[2]=L[-1] L[4]=L[3] L[-1]=L[3] print(L) (a) [0, '2', 1, '5', '5', '1'] (b) [0, '2', 1, '5', '5', '5'] (c) [1, '2', 1, '5', '5', '5'] (d) [0, '3', 1, '5', '5', '5'] (e) [0, '2', 4, '5', '5', '5'] (f) [0, '2', 3, '5', '5', '5'] (g) [0, '2', 2, '5', '5', '5']	**[01]**
79	What will be the output of the following Python code? l1 = ['A', 'B', 'C', 'D','E'] l2 = l1.copy() l3 = l1[: :-1] l2[4] = 'G'	**[01]**

	l3[3] = 'H'
	l1[4] = l2[4]
	l1[3] = l3[3]
	sum = 0
	for i in (l1, l2, l3):
	  if i[4] == 'G':
	  sum += 7
	  if i[3] == 'H':
	  sum += 22
	  if i[2] == 'C' :
	  sum += 30
	print(sum)
	(a) 148
	(b) 150
	(c) 59
	(d) 118
	(e) 74
	(f) 29
	(g) 175	

80	What will be the output of the following program? s = "ball" r = "" for i in s: r = i.upper() + r print(r) (a) ball (b) BALL (c) llab (d) LLAB (e) llb (f) LLB (g) Error	**[01]**
81	What will be the output of the following program? s = “I love my INDIA” print(s[-1]+s[3:4]+s[7:9]+s[-3:-1]+s[-1:-3:-1]+s[5:9]+s[10:]) (a) AomyDIAIe myINDI (b) AomyDAIe myINDIA (c) AomyDIAe myINDIA (d) AomyDIAIe INDIA (e) AyDIAIe myINDIA (f) AoyDIAI myINDIA (g) AomyDIAIe myINDIA	**[01]**
82	What will be the output of the following Python code? my_tuple = (1, 2, 3, 4) my_tuple.append((1,2,3)) print(len(my_tuple)) A. 5 B. 7 C. 8 D. 5 E. Attribute Error F. Syntax Error G. 0	**[01]**

83	What will be the output of the following Python code?
	def change(i=1,j=2):
	  i = i + j
	  j = j + 1
		[01]

	print(i,j) change(j=1, i=2) A. 1 2 B. 3 3 C. 3 2 D. 2 2 E. Error F. 1 1 G. 2 1	
84	What will be the output of the following python code? str1="Hello World! Hello Hello" str1.count("Hello",12,25) A. 1 B. 2 C. 3 D. 4 E. 5 F. 6 G. 7	**[01]**
85	What will be the output of the following Python code? min = (lambda x, y: x if x < y else y) print(min(101*99, 102*98)) A. 9997 B. 9996 C. 9999 D. 101 E. 102 F. 99 G. Error	**[01]**
86	What is the output of the following code? a="Hello Welcome to the Python" print(a.find("z")) print(a.index("z")) A. Value Error -1 B. -1 C. 1 D. -1 E. Syntax Error F. -1 G. -1 Value Error Syntax Error Syntax Error 1 1 0	**[01]**
87	What is the output of the following code? D={1:"Amit",2:"Suman",3:"Ravi",4:"Anuj"} print(max(D.values())) A. Amit B. Suman C. Ravi D. Anuj E. Value Error F. Attribute Error G. Syntax Error	**[01]**

88	What will the below Python code do?
	
	set1={2,3}
	
	set2={3,2}
	
	set3={2,1}
	
	if(set1==set2):
	
	print("yes")
	
	else:
	
	print("no")
	
	if(set1==set3):
	
	print("yes")
	
	else:
	
	print("no")
	
	A. yes,no B. no,yes C. no,no D. yes,yes E. no F. yes G. Error
		[01]

89	What will be the output of the following code? t1=(1,2,3,4,5,6,7) print(t1[t1[1]+t1[-4]])	**[01]**

	A. 1 B. 2 C. 7 D. 4 E. 5 F. 6 G. 3	
90	What will be the output of the following Python code? numberGames = {} numberGames[(1,2,4)] = 8 numberGames[(4,2,1)] = 10 numberGames[(1,2)] = 12 sum = 0 for k in numberGames: sum += numberGames[k] print (len(numberGames) + sum) A. 30 B. 24 C. 33 D. 31 E. 32 F. 28 G. Error	**[01]**
91	What is the output of the following code? L=[['Physics',101],['Chemistry',202],['Maths',303],45,6,'j'] print(len(L)) A. 3 B. 5 C. 6 D. 4 E. 7 F. 2 G. Error	**[01]**

92	What will be the last line of the output of the following Python code if test_fib(6) is called?
	`def fib(x):`
	`  """Assumes x an int >= 0`
	`  Returns Fibonacci of x"""`
	`  global num_fib_calls`
	`  num_fib_calls += 1`
	`  if x == 0 or x == 1:`
	`  return 1`
	`  else:`
	`  return fib(x-1) + fib(x-2)`
	
	`def test_fib(n):`
	`  for i in range(n+1):`
	`  global num_fib_calls`
	`  num_fib_calls = 0`
	`  print('fib of', i, '=', fib(i))`
	`  print('fib called', num_fib_calls, 'times.')`
	a. fib called 5 times. b. fib called 10 times. c. fib called 15 times.
	d. fib called 20 times. e. fib called 25 times. f. fib called 30 times.
	g. It will throw an error due to incorrect use of global
		[01]

93	What will be the output of the following piece of code?
	def check(s):
	  if len(s) <= 1:
	  return True
	  else:
	  return s[0] == s[-1] and check(s[1:-1])
	print(check('saippuakivkauppias'))
	a. s b. ias c. k d. iv e. i f. True g. False
		[01]

94	What will be the output of the following Python code? L = ['Arnold', 'Bootboggler', 'Christi', 'Dickinson'] print(L[-1][-1]) a. Dickinson b. D c. Arnold d. r e. A f. n g. a	**[01]**
95	What will be the output of below Python code? t=() t1=t*10 print(len(t1)) a. 0 b. 1 c. 2 d. 3 e. 4 f. -1 g. Error	**[01]**

96	Which of the following two Python codes will give same output? (1) print(t[9:10]) (2) print(t[-5:5]) (3) print(t[-4:-9]) (4) print(t[-1:]) If t=(3,7,10,4,6,31,9) a. 1, 2 b. 2, 3 c. 1, 3 d. 3, 4 e. 2, 4 f. 1,4 g. None of these	**[01]**
97	What will be the output of the following Python code? b = 20 c = lambda a: a * b print(c(11)) a. 211 b. 20 c. 11 d. 2011 e. 220 f. 2.11 g. Error due to incorrect use of lambda	**[01]**

98	Pick the reason for why the following function for checking if a number is prime or not is incorrect.
	`def is_prime(x):`
	`  """Assumes x is a nonnegative int`
	`  Returns True if x is prime; False otherwise"""`
	`  if x <= 2:`
	`  return False`
	`  for i in range(2, x):`
	`  if x%i == 0:`
	`  return False`
	`  return True`
	a. Error in line 2 b. Error in line 9 c. Error in line 7 d. Incorrect result for x = 3 e. Incorrect result for x = 2 f. Incorrect result for x = 4
	g. More than one return statements in a single function.
		[01]

99	What will be the value of x after the execution of this code?
	x = 50
	def func():
	  global x
	  print('x is', x)
	  x = 2
	  print('Changed global x to', x)
	func()
	print(x)
	a. 50 b. 2 c. 4 d. 52 e. 54 f. 6 g. 22
		[01]

100	Guess the correct output of the following code? str1 = 'LJIET' print(str1[1:4], str1[:5], str1[4:], str1[0:-1], str1[:-1]) a. JIE LJIET T LJIE LJIE b. JIET LJIET T LJIE LJIE c. JIE LJIET T LJIE LJIET d. JIET LJIET T LJIE LJIET e. JIE LJIET IT LJIET LJIE f. JIE LIET T LJIE LJIE g. Error	**[01]**

101	What will be the output of the following Python code?
	names1 = ['Amir', 'Bear', 'Charlton', 'Daman']
	names2 = names1
	names3 = names1[:]
	names2[0] = 'Alice'
	names3[1] = 'Bob'
	sum = 0
	for ls in (names1, names2, names3):
	  if ls[0] == 'Alice':
	  sum += 1
		[01]

	if ls[1] == 'Bob': sum += 10 print(sum) a. 10 b. 11 c. 12 d. 13 e. 14 f. 15 g. 16	

102	What will be the output of the following Python code?
	def change(i = 1, j = 2):
	  i = i + j
	  j = j + 1
	  print(i, j)
	change(j = 1, i = 2)
	
	a) 1 2 b) 2 1 c) 3 3 d) 3 2 e) 2 3 f) 1 1 g) 2 2
		[0.5]

103	What type will be printed when the following code executes? >>>aTuple = ("Orange") >>>print (type(aTuple)) a) list b) tuple c) set d) dict e) str f) array g) Error	**[0.5]**

104	What will be the output of the following Python code?
	def function1(var1,var2=5):
	  var1=2
	  var3=var1*var2
	  return var3
	var1=3
	print(function1(var1,var2))
	
	a) 10 b) 15 c) 6 d) No output
	e) TypeError f) SyntaxError g) NameError
		[0.5]

105	Choose the correct function declaration of fun1() so that we can execute the following function call successfully: fun1(25, 75, 55) fun1(10, 20) a) define fun1() b) def fun1(a,b,c): c) def fun1(args*): d) def fun1(*data): e) def fun1(kwargs**): f) def fun1(**data): g) No, it is not possible in Python	**[0.5]**
106	What will be the output of below Python code? tupl=("annie","hena","sid") print(tupl[-3:0]) a) (“annie”) b) None c) ("annie","hena","sid") d) ("sid", "hena", "annie") e) () f) No output g) Error	**[0.5]**

107	What will be the output of the following Python code?
	def power(x, y=3):
	  r = 1
	  for i in range(y):
	  r = r * x
	  return r
	print(power(3),end=" ")
	print(power(3,3))
	
	a) 3 3 b) 9 9 c) 9 27 d) 27 27 e) 27 9 f) 3 9 g) No output
		[0.5]

108	What is the output for following code: list1=[1,2,3,4]	**[01]**

	list2=[5,6,7,8] print(len(list1+list2-list1+list2)) a) 4 b) 8 c) 6 d) No output e) TypeError f) SyntaxError g) 0	
109	What is the output for following code: s="blog" for i in range(-1,-len(s),-1): print(s[i],end="$") a) g$olb b) golb c) glob d) No output e) TypeError f) SyntaxError g) gol$	**[01]**
110	Select which is true for Python function: i) A function is a code block that only executes when called and always returns a value. ii) A function only executes when it is called and we can reuse it in a program. iii) Python doesn't support nested function a) only i b) only ii c) i & ii d) i & iii e) ii & iii f) i, ii & iii g) None of these	**[01]**

111	What is the output for following code:
	def outer_fun(a, b):
	  def inner_fun(c, d):
	  return c + d
	  return inner_fun(a, b)
	
	res = outer_fun(5, 10)
	print(res)
	
	a) 5 b) 10 c) 15 d) No output
	e) TypeError f) NameError g) (5,10)
		[01]

112	What is the output for following code: **print("A#B#C#D#E".split("#",2))** a) ['A', 'B', 'C', 'D', 'E'] b) ['A#', 'B#', 'C#D#E'] c) ['A', 'B', 'C#D#E'] d) ['A#', 'B#', 'C#', 'D#', 'E'] e) TypeError f) SyntaxError g) No output	**[01]**
113	What is the output for following code: **print("*".join(12345))** a) 1*2*3*4*5 b) *12345* c) **12345** d) *1*2*3*4*5 e) TypeError f) SyntaxError g) No output	**[01]**

114	What will be the output of the following Python code?
	x = 50
	def func(x):
	  print ('x is', x)
	  x = 2
	  print ('Changed local x to', x)
	func(x)
	print ('x is now', x)
	A) x is 50
	  Changed local x to 2
	  x is now 50
	B) x is 50
		[01]

	Changed local x to 2 x is now 2 C) x is 50 Changed local x to 2 x is now 100 D) x is 50 Changed local x to 100 x is now 100 E) x is 100 Changed local x to 2 x is now 100 F) x is 100 Changed local x to 2 x is now 50 G) x is 2 Changed local x to 50 x is now 50	
115	Select the correct output of the following String operations. >>>str1 = "myis isisname isisis james isis isisisisbond"; >>>sub = "is"; >>>print (str1.count(sub, 5)) A) 10 B) 7 C) 11 D) 6 E) 8 F) 9 G) 12	**[01]**

116	What will be the output of the following Python code?
	def power (x, y=2):
	r = 1
	for i in range(y):
	r = r * x
	return r
	print (power (3))
	print (power (3,3))
	A) 212 B) 9 C) 567 D) 4 E) 2 F) 3 G) 3
	32 27 98 8 4 6 9
		[01]

117	What will be the output of the following Python code? def f1 (i = 1, j = 2): i =3* i -2* j j = 4*j + 1 print (i, j) f1 (j = 5, i = 10) A) -1 9 B) 1 1 C) 20 21 D) -5 41 E) 20 21 F) 12 15 G) 22 20	**[01]**
118	What will be the output of the following Python code? x = {"Rina", "sita", "Ravi"} y = {"google", "Ravi", "whatsapp"} z = x.difference(y) print(z) A) {"Rina", "sita", "Ravi"} B) {"google", "Ravi","whatsapp"} C) {"google", "whatsapp"} D) {" Rina", "sita"} E) {"Ravi"} F) {"google", "whatsapp", "Rina", "sita"} G) {"google", "whatsapp", "Ravi", "Rina", "sita"}	**[01]**
119	Suppose list1 is [2, 3, 22, 14, 25], What is list1[: -1]? A) [2, 3, 22, 14, 25] B) [25, 14, 22, 3, 2] C) 25 D) [25, 14, 22, 3] E) [25, 22, 2] F) [25] G) [2, 3, 22, 14]	**[01]**
120	What will be the output of the following Python code snippet? numbers = {}	**[01]**

	letters = {} comb = {} numbers [1] = 5 numbers [5] = 17 letters [4] = 'B' comb['Numbers'] = numbers comb['Letters'] = letters print(comb) A) 'Numbers': {1: 5, 5: 17} B) {'Numbers': {1: 5}, 'Letters': {4: 'B'}} C) {'Numbers': {1: 5, 5: 17},'Letters': {4: 'B'}} D) 'Numbers': {1: 56, 2: 7} E) 'Letters': {4: 'B'} F) {'Numbers': {1: 5,2: 17},'Letters': {1: 'B'}} G) Error, dictionary in a dictionary can't exist	

121	What is the output of the following function call?
	def display_person(*args):
	for i in args:
	print(i)
	display_person("Emma", 25, '5')
	A) 25 B) Emma C) 5 D) 25 E) Emma F) Emma G) TypeError
	5 5 25
	5
		[01]

122	What will be the output of below Python code? tupl=([2,-5,7,3],"abbc",3.7,0,9) tupl[0][3]=1 print(tupl) A) ([2,-5,7,1],"abc",0,9) B) ([1,3.7],"abbc",0,9) C) ([2,-5,7,1],"abbc",3.7,0,9) D) ([3,1],"abbc",3.7,0,9) E) ([2,-5,1,2],"abbc",0,9) F) None G) TypeError	**[01]**
123	Suppose list1 is [13, 4, 5, 20, 5, 25, 11, 13], what is list1 after list1.reverse()? A) [13, 4, 5, 20, 5, 25, 11, 13] B) [11, 13,13, 4, 5, 5, 20, 25] C) [25, 20, 5, 5, 4, 13,13,11] D) [11,13,4,5,20,25] E) [13, 11, 25, 5, 20, 5, 4, 13] F) [13,11,25,5,20,4] G) [11,11,13,13,4,4,5,5,20,20,25,25]	**[01]**
124	What will be the output of the following Python code, if s1= {1, 2, 3}? s1.issubset(s1) a. TRUE b. FALSE c. {1, 2, 3} d. True e. False f. No Output g. Error	**[0.5]**

125	What will be the output of the following Python code?
	def mul(x, y=2):
	r = 1
	for i in range(y):
	r = r * x
	return r
	print(mul(3))
	print(mul(3,4))
	
	a. 9 12 b. 9 27 c. 9 81 d. 3 9 e. 3 81 f. 3 27 g. 9 243
		[0.5]

126	Which of the following two Python codes will give same output? (1) print(tupl[:-1]) (2) print(tupl[0:5]) (3) print(tupl[0:4]) (4) print(tupl[-4:]) If tupl=(1,2,3,4,5) a. 1, 2 b. 1, 4 c. 2, 3 d. 2, 4 e. 1, 3 f. 3, 4 g. None of these	**[0.5]**

127	What will be the output of the following Python code? a={} a[2]=1 a[1]=[2,3,4] print(a[1][2]) a. 1 b. 2 c. 4 d. 3 e. [2, 3, 4] f. {1:[2,3,4]} g. Error	**[0.5]**
128	What will be the output of the following Python code? l=[1,2,3,5,7,8,9,10] m=max(l) print(l.index(m)) a. 7 b. 8 c. 10 d. 5 e. 0 f. Error g. None of these	**[0.5]**
129	What is the output of the following piece of code? a={1:"A",2:"B",3:"C"} print(a.get(4,4)) a. A b. B c. C d. 1 e. 4 f. 3 g. None of these	**[0.5]**
130	What will be the output of the following Python code? def change(i = 1, j = 2): i = i + j j = j + 1 print(j, i) change(j=1, i=2) a. 2 3 b. 1 3 c. 3 2 d. 1 2 e. 3 3 f.3 4 g.SyntaxError	**[01]**
131	What will be the output of the following Python code? car=20 bike=10 cycle=30 def new_purchase(): global bike, cycle car=30 bike=20 cycle=50 new_purchase() print(car+10,bike+5,cycle+5) a. 30 15 35 b. 30 25 35 c. 20 20 50 d. 30 25 55 e. 40 25 55 f. 20 25 55 g. SyntaxError	**[01]**

132	What is returned by the following function?
	def list_transformation():
	alist = [4, 2, 8, 6, 5]
	blist = [ ]
	for item in alist:
	blist.append(item+2)
	return blist
	
	a. [4, 2, 8, 6, 5] b. [6, 4, 10, 8, 7] c. [6, 4, 10, 8, 7, 6, 4, 10, 8, 7] d. [8, 4, 16, 12, 10] e. [4, 2, 8, 6, 5, 4, 2, 8, 6, 5] f. Error g. None
		[01]

133	What is returned by the following function? shift=1 n=12345	**[01]**

	s=str(n) x=s[shift:]+s[:shift] print(x) a. 12345 b. 23451 c. 34512 d. 54321 e. 45123 f. 23145 g. Error	

134	What will be the output of the following Python code?
	def enc(s):
	  encoded=""
	  c=1
	  ld=s[0]
	  for i in range(1,len(s)):
	  if ld==s[i]:
	  c=c+1
	  else:
	  encoded = encoded+str(c)+ld
	  c=0
	  ld=s[i]
	  c=c+1
	  encoded=encoded+str(c)+ld
	  return encoded
	s="AABBCCDD"
	print(enc(s))
	
	a. 1A2B3C4D b.A1B2C3D4 c. ABCD1234 d. 2A2B2C2D e. 1234ABCD f. Error g. No Output
		[01]

135	What will be the output of the following Python code? x={1,2,3,4,5} y={3,4,5,6,7} z={1,3,5,7,9} print((x|y) & (x|z)) a. {1, 2, 3, 4, 5, 6, 7} b. {1, 2, 3, 4, 5, 7} c. {1, 3, 5, 7, 9} d. {1, 2, 3, 5, 6, 7, 9} e. {3, 4, 5, 6, 7} f. {1, 2, 3, 5, 7, 9} g. { 1, 3, 5}	**[01]**
136	What will be the output of the following Python code? nums = [3, 5, 16, 27] some_nums = list(filter(lambda num: 5 <= num < 27, nums)) print(some_nums) a. [3, 5, 16, 27] b. [5, 16, 27] c. [5, 16] d. [3, 5, 16] e. [3, 5, 27] f. SyntaxError g. None of these	**[01]**

137	What will be the output of the following Python code?
	def function1(var1=7,var2=5):
	  var1=2
	  var3=var1*var2
	  return var3
	var2=6
	var1=3
	print(function1(var1,var2))
	
	a) 15 b) 25 c) 10 d) 18 e) Error as var2 is not defined while calling the function f) 42 g) 12
		[0.5]

138	What will be the output of the following Python code?
	
	def current_date(**kwargs):
	  for i in kwargs:
	  print(i)
	current_date(date=2-1-2023)
	
	a) 2-1-2023 b) i c) date=2-1-2023 d) date e) date:2-1-2023
	f) kwargs g) None of Above
		[0.5]

139	What will be the output of the following Python code?
	x = 'abcd'
	for i in x:
	  i.isupper()
	print (x)
	a) ABCD b) 0 1 2 3 c) Error d) abcd
	e) A
	  B
	  C
	  D f) Abcd g) none of mentioned
		[0.5]

140	What will be the output of the following Python code? t=(1,2,4,3,6,8,4) t[1:-1:-1] a) (2,4,3,6,8) b) (2,1) c) (8,6,3,4,2,1) d) () e) (2,4,3,6,8,4) f) (4,8) g) Error	**[0.5]**
141	What will be the output of the following Python code? my_tuple = (1, 2, 3, 4) my_tuple.append((1,2,3)) print (len(my_tuple)) a) 4 b) 7 c) 5 d) 1 e) 2 f) 3 g) Error	**[0.5]**

142	What will be the output of the following Python code?
	def writer():
	  title = 'Sir'
	  name = (lambda x: title + ' ' * 2x)
	  return name
	who = writer()
	print(who('Arthur'))
	
	a) Sir Arthur Sir Arthur b) ArthurSir c) Arthur Sir d) SirArthurSirArthur
	e) Arthur f) Sir Arthur Arthur g) Syntax Error
		[0.5]

143	What will be the output of the following Python code? def fun(a=5,b=10,c): print(a**2,b//a,c**1) fun(20,c=30) a) 400 1 5 b) 400 4 5 c) 25 2 5 d) 25 2 30 e) 25 4 30 f) Syntax Error g) 400 2 30	**[0.5]**
144	What will be the output of the following Python code? i = [10, 11, 12, 13]	**[0.5]**

	for i[-2] in i: print(i[-2] ,end=" ") a) 10 11 11 13 b) 10 12 12 13 c) 12 d) 12 13 e) 10 11 12 13 f) Attribute error g) Syntax Error	
145	Following Lambda function series can be used to find _____. from functools import * Series = lambda n: reduce(lambda x, _: x + [x[-1] + x[-2]], range (n-2) , [0,1]) a) The geometric series b) Fibonacci Series c) Sum of two consecutive numbers in a list d) sum of first two numbers in a list e) sum of last two numbers in a list f) sum of odd numbers of a list g) Syntax error	**[01]**

146	What will be the output of the following Python code?
	
	a = [5,5,6,7,7,7]
	b = set(a)
	def test(lst):
	  if lst in b:
	  return 1
	  else:
	  return 0
	for i in filter(test, a):
	  print(i,end=" ")
	
	a) 1 b) 5 6 7 c) 0 d) 5 5 6 7 7 7
	e) 5 5 6 f) 5 6 7 7 7 g) Error
		[01]

147	What will be the output of the following Python code?
	
	s1={3, 4}
	s2={1, 2}
	s3=set()
	i=0
	j=0
	for i in s1:
	  for j in s2:
	  s3.update((i,j))
	  i+=1
	  j+=1
	print(s3)
	
	a) {1,2,3,4,5} b) {(4, 2), (5, 2)} c) {(3, 1), (4, 2)}
	d) {(3, 1), (4, 1), (4, 2), (5, 2)} e) {(3, 1), (4, 1), (4, 2), (5, 3)}
	f) {1,2,3,4} g) Error
		[01]

148	What will be the output of the following Python code?
	
	def enc(st):
	  encoded=""
	  c=1
	  ld=st[0]
	  for i in range (1,len(st)):
	  if ld==st[i]:
	  c=c+1
	  else:
		[01]

	encoded=encoded+str(c)+ld c=0 ld=st[i] c=c+1 encoded=encoded+str(c)+ld return encoded st="AAABBACCAA" print(enc(st)) a) 3A2B1A3C2A b) AAABBACCAA c) A3B2A1C3A2 d) 3A2B1A2C2A e) A3B2A1C2A2 f) 10 g) Error	

149	What will be the output of the following Python code?
	names1 = ['Amir', 'Bear', 'Charlton', 'Daman']
	names2 = names1
	names3 = names1
	names2[0] = 'Alice'
	names3[1] = 'Bob'
	sum = 0
	for ls in (names1, names2, names3):
	if ls[0] == 'Alice':
	sum += 1
	if ls[1] == 'Bob':
	sum += 10
	print(sum)
	
	a) 12 b) 11 c) 32 d) 33 e) 22 f) 21 g) 20
		[01]

150	What will be the output of the following python code? car=20 bike=10 cycle=30 def new_Pur(): global bike,cycle car=30 bike=20 cycle=50 new_Pur() print(car+10," ",bike+5," ",cycle+5) a) 40 25 55 b) 30 15 35 c) 30 25 35 d) 20 25 55 e) 25 20 50 f) 30 25 55 g) Syntax Error	**[01]**
151	What will following Python code return? str1="LJ'University" print(len(str1)) (A) 12 (B) 15 (C)13 (D) 2 (E) ERROR (F) 10 (G) 1	**[0.5]**
152	What will the below Python code will return? str1="save paper,save trees" str1.find("save",1) (A) 0 (B) 2 (C)-1 (D) 11 (E) ERROR (F) 10 (G) 12	**[0.5]**
153	What will be the output of the following Python code? x = ['ab', 'cd'] for i in x: i.upper() print(x)	**[0.5]**

	(A) [‘ab’, ‘cd’] (B) [‘AB’, ‘CD’] (C) [None, None] (D) none of the mentioned (E) ERROR (F) [‘Ab’, ‘Cd’] (G) [“AB”,”cd”]	
154	What will be the output of below Python code? tupl=("annie","hena","sid") print(tupl[-3:0]) (A) ("annie") (B) () (C) None (D) NO OUTPUT (E) ERROR (F) annie (G) sid	**[0.5]**
155	What will be the output of the following Python code? a=("Check")*3 print(a) (A) (‘Check’,’Check’,’Check’) (B) * Operator not valid for tuples (C)CheckCheckCheck (D) Syntax error (E) 3 (F)("Check")("Check")("Check") (G) aaa	**[0.5]**
156	What will be the output of below Python code? tupl=() tupl1=tupl*2 print(len(tupl1)) (A) 2 (B) 1 (C) 10 (D) 0 (E) ERROR (F) 2.0 (G) 1.0	**[0.5]**
157	What will be the output of the following Python code? def f(): print(x,end=" ") return y def f(): print(y,end=" ") return x=5 y=4 print(f()) (A) 4 None (B) 5 4 (C) 4 5 (D) 4 (E) ERROR (F) 5 (G) 4 “”5	**[01]**
158	What will be the output of the following Python code? def f(l): l.append([1,2,3]) return l=[1,2,3] print(l,end=" ") f(l) print(l) (A) [1,2,3] [1,2,3] (B)[1,2,3] [1,2,3,[1,2,3]] (C)[1,2,3] [1,2,3,[1,2,3] (D) ERROR (E) [1,2,3] (F) [1,2,3] [1,2,3,1,2,3] (G) [1,3,2] [1,3,2]	**[01]**
159	What will be the output of the following Python code? d={1:"welcome",[1]:{1:2}} print(d[[1]]) (A) “welcome” (B) {1:2} (C) ERROR (D) 1 (E) 2 (F) “welcome” {1,2} (G) [1]	**[01]**
160	What will be the output of the following Python code? l=[1,2,[[1,2,[1,2],1,2]]] print(l[2][0]) (A) 1 (B) 2 (C) [[1, 2, [1, 2], 1, 2]] (D) [1, 2, [1, 2], 1, 2] (E) [1,2,1,2] (F) ERROR (G) [1,2]	**[01]**
161	What will be the output of the following Python code? l=[1,"m",["a",{1:[1,2,3]}]] t={(1,2,3):(5)} s=(l[2][1][1],t[(1,2,3)]) print(s) (A) ([1, 2, 3], 5) (B) ([1, 2, 3]) (C) [1,2,3] (D) a5 (E) ERROR (F) 10 (G) 7	**[01]**

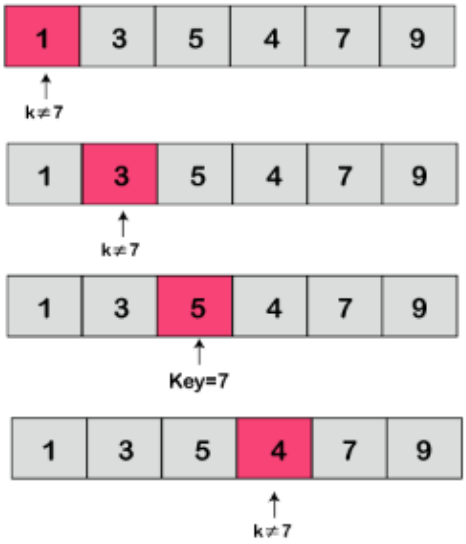
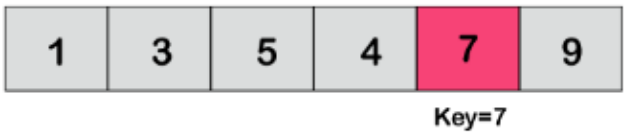
162	What will be the output of the following Python code? l=[1,2,(5)] l[2]=7 print(l) (A) VALUE ERROR (B) [1,2,7] (C) TYPE ERROR (D) IMMUTABLE ERROR (E) [1,2,(5)] (F) [1,2,5] (G) SYNTAX ERROR	**[01]**

163	def f1(*m):
	sum1=len(m)
	for i in m:
	sum1+=i
	return sum1
	x=f1(1,2,3,(4,)==(4,),(5,)==(5))
	print(x)
	(A) 11 (B) 13 (C)12 (D) 15 (E) ERROR (F) 10 (G) 24
		[01]

1	Write a Python program to capitalize the first and last character of each word in a string. For example, Enter the String: **This is python** Output: **ThiS IS PythoN** Enter the String: **Python is programming language** Output: **PythoN IS ProgramminG LanguagE**	**[03]**
2	**Write a Program to Print Longest Common Prefix from a given list of strings.** The longest common prefix for list of strings is the common prefix (starting of string) between all strings. For example, in the given list [“apple”, “ape”, “zebra”], there is no common prefix because the 2 most dissimilar strings of the list “ape” and “zebra” do not share any starting characters. **If there is no common prefix between all strings in the list than return -1.** For example, Input list: **["lessonplan", "lesson","lees", "length"]** The longest Common Prefix is: **le** Input list: **["python","pythonprogramming","pythonlist"]** The longest Common Prefix is: **python** Input list: **["lessonplan", "lesson","ees", "length"]** The longest Common Prefix is: **-1**	**[03]**
3	Given a string A with lowercase english alphabets and you have to return a string in which, with each character its frequency is written in adjacent. Input 1: abbhuabcfghh Input 2: a Ouput 1: a2b3h3u1c1f1g1 Ouput 2: a1	**[03]**
4	Write a Python program for Words Frequency in String input by user. Print data in form word entered by user and frequency.	**[03]**

5	Create a python program which takes password as input and a function which checks whether the given password is valid or not under following conditions without using the RegEx module in Python language. Conditions required for a valid password: 1. Password strength should be at least 8 characters long 2. Password should contain at least one uppercase and one lowercase character. 3. Password must have at least one number.	**[02]**
6	Write a Python program to calculate the sum of the positive and negative numbers of the below given list of numbers using lambda function. **Input** : m = [2, 4, -6, -9, 11, -12, 14, -5, 17] **Output** : Sum of the positive numbers: -32 Sum of the negative numbers: 48	**[04]**
7	Write a python program with user defined function that reads the words from paragraph and stores them as keys in a dictionary and count the frequency of it as a value . For Example: Input string: "Dog the quick brown fox jumps over the lazy dog" Output: {'the': 2, 'jumps': 1, 'brown': 1, 'lazy': 1, 'fox': 1, 'over': 1, 'quick': 1, 'dog': 2}	**[3]**
8	Write a Python program to create a Caesar encryption. Note: In cryptography, a Caesar cipher, also known as Caesar's cipher, the shift cipher, Caesar's code or Caesar shift, is one of the simplest and most widely known encryption techniques. It is a type of substitution cipher in which each letter in the plaintext is replaced by a letter some fixed number of positions down the alphabet. For example, with a right shift of 3, A would be replaced by D, E would become H, and so on. The method is named after Julius Caesar, who used it in his private correspondence. For Example: Input Text : LJIET ENG Shift : 3 Cipher: OMLHW HQJ	**[3]**
9	Write a python function to check & return if two strings are balanced. Two strings are balance, if all the characters in the first string are present in the second string. The position of a character in both the string doesn't matter. Ask user to pass on two strings. When the function is called, it should display if the two strings are balanced or not!	**[04]**
10	Write a python program, to find numbers less than zero from a list entered by user. Display this output as a tuples. Further find total of all numbers less than zero. Use ONLY lambda ( ) , map (), filter ( ), reduce ( ) . You are not allowed to use built-in functions: max(), min(), sum(). You are not allowed to use iteration through looping	**[02]**

11	Write a python program to check the validity of a Password. Primary conditions for password validation: 1. Minimum 8 characters. 2. The alphabet must be between [a-z] 3. At least one alphabet should be of Upper Case [A-Z] 4. At least 1 number or digit between [0-9] 5. At least 1 character from [_ or @ or $] Examples: Input: Ram@_f1234 Output: Valid Password Input: Rama_fo$ab Output: Invalid Password Explanation: Number is missing Input: Rama#fo9c Output: Invalid Password Explanation: Must consist from _ or @ or $	**[03]**
12	Write a python program to print sum of even numbers and sum of odd numbers from elements given in tuple. **Examples:** T= (1,2,3,4,5,6) Sum of even number = 12 Sum of odd number = 9	**[03]**
13	Write a python program to print sum of even numbers and sum of odd numbers from elements given in tuple. **Examples:** T= (1,2,3,4,5,6) Sum of even number = 12 Sum of odd number = 9	**[03]**
14	Write a Python function to implement **linear search algorithm.** Linear search is also called as sequential search algorithm. It is the simplest searching algorithm. In Linear search, we simply traverse the list completely and match each element of the list with the item whose location is to be found. If the match is found, then the location of the item is returned; otherwise, the algorithm returns NULL. The following is linear search algorithm: Given a list L of n elements with values or records L0 .... Ln−1, and target value T, the following subroutine uses linear search to find the index of the target T in L. 1. Set i to 0. 2. If Li = T, the search terminates successfully; return i. 3. Increase i by 1.	**[03]**

	4. If i < n, go to step 2. Otherwise, the search terminates unsuccessfully. **Step - 1:** Start the search from the first element and Check key = 7 with each element of list x.  **List to be Searched for** **Step - 2:** If element is found, return the index position of the key.  **Step - 3:** If element is not found, return element is not present.  Input: Enter the list of numbers: 5 4 3 2 1 10 11 2 The number to search for: 1 Output: 1 was found at index 4. 1 mark for logic 1 mark for output 1 mark for nomenclature	
15	Write a Python program to calculate the sum and average of the digits present in a string. Input= "PYnative29@#8496" Output: Sum is: 38 Average is 6.333333333333333 1 mark for logic 1 mark for output (0.5 for sum and 0.5 for average)	**[03]**

	1 mark for nomenclature	
16	Write a Python program to find numbers divisible by nineteen or thirteen from a list of numbers using Lambda and filter.	**[03]**
17	Given a list of elements, write a python program to perform grouping of similar elements, as different key-value list in dictionary. **Note: To perform the sorting, use the sorted function by converting the dictionary into a list of tuples. After sorting, convert the list of tuples back into a dictionary and print it.** **Input** : test_list = [4, 6, 6, 4, 2, 2, 4, 8, 5, 8] **Output** : {4: [4, 4, 4], 6: [6, 6], 2: [2, 2], 8: [8, 8], 5: [5]} **Explanation** : Similar items grouped together on occurrences. **Input** : test_list = [7, 7, 7, 7] **Output** : {7 : [7, 7, 7, 7]} **Explanation** : Similar items grouped together on occurrences.	**[03]**
18	Write a Python program to return another string similar to the input string, but with its case inverted. For example, input of "Mr. Ed" will result in "mR. eD" as the output string. **Note:** Use of built in swapcase function is prohibited.	**[03]**
19	Write a Python program to calculate the sum of the positive and negative numbers of a given list of numbers using lambda function.	**[03]**
20	Write a python program to check the validity of password without using any built-in functions or modules. Password checker program basically checks if a password is valid or not based on the password policies mention below: • Password should contain at least one lowercase letter(a-z). • Password should contain at least one uppercase letter(A-Z). • Password should contain at least one special character (@, #, %, &, !, $, etc…). • Password should not contain any space. • Password should contain at least one digit (0-9). • Password length should be between 8 to 15 characters. It should not contain the repeated combination of consecutive 3 characters.	**[03]**
21	Write a Python function that accepts a string and calculate the number of uppercase letters and lowercase letters.	**[03]**
22	Write a program to check if two strings are balanced. For example, strings s1 and s2 are balanced if all the characters in the s1 are present in s2 and length of s1 & s2 should be same. The character's position doesn't matter. **<u>Example :</u>** s1 = hello s2 = olleh Balanced	**[04]**
23	Write a Python programme that accepts a string and calculate the number of uppercase letters, lowercase letters and number of digits. **For example,** Input: Hello Pyth@n is 100% easy	**[03]**

	Output: Uppercase letters : 2 Lowercase letters : 14 Digits : 3	
24	Write a Python program using function to shift the decimal digits n places to the left, wrapping the extra digits around. If shift > the number of digits of n, then reverse the string. Note: Function will take two parameters: 1. The number 2. How much shift user want Example: Input: n=12345 shift=1 Output: Result=23451 Input: n=12345 shift=3 Output: Result=45123 Input: n=12345 shift=5 Output: Result=12345 Input: n=12345 shift=6 Output: Result=54321	**[03]**
25	Write Python Program to create a dictionary with the key as the first character and value as a list of words starting with that character. **Example:** Input: Don’t wait for your feelings to change to take the action. Take the action and your feelings w ill change Output: {'D': ['Don’t'], 'w': ['wait', 'will'], 'f': ['for', 'feelings', 'feelings'], 'y': ['your', 'your'], 't': ['to', 'to', 'take', 'the', 'the'], 'c': ['change', 'change'], 'a': ['action.', 'action', 'and'], 'T': ['Take']}	**[03]**
26	Write a Python Program to capitalize the first and last character of each word in a string **Example:** Input: enter a string:Python program to capitalize the first and Last character of EAch word In a string Output: PythoN PrograM TO CapitalizE ThE FirsT AnD LasT CharacteR OF EacH WorD IN A StrinG	**[03]**
1	**Part 1 (5 marks):** Given a list A of size N. You need to count the number of special elements in the given list and also print balanced list if it been formed. An element is special if removal of that element makes the list balanced. The list will be balanced if sum of even index elements is equal to the sum of odd index elements. Check for all below mentioned test cases show output for all four given inputs: Example Input **Input 1:** A = [2, 1, 6, 4] **Input 2:** A = [5, 5, 2, 5, 8]	**[09]**

Input 3:
A=[-6,-4,-1,2,4,5]
Input 4:
A=[-5,-4,-2,0,1,3]

Example Output
Output 1:
Explanation 1:
After deleting 1 from list : [2,6,4]
(2+4) = (6)
Hence 1 is the only special element, so count is 1
Output 2:
Explanation 2:
If we delete A[0] or A[1] , list will be balanced
(5+5) = (2+8)
So A[0] and A[1] are special elements, so count is 2.

Part 2 (4 marks):

Given a list of integers A representing the length of ropes.

You need to connect these ropes into one rope. The cost of connecting two ropes is equal to the sum of their lengths.

Find and return the minimum cost to connect these ropes into one rope.

Input Format
The only argument given is the integer array A.
Output Format
Return an integer denoting the minimum cost to connect these ropes into one rope.

Example Input
Input 1:

A = [1, 2, 3, 4, 5]
Input 2:

A = [5, 17, 100, 11]

Example Output
Output 1:
33
Output 2:
182
Example Explanation
Explanation 1:

Given array A = [1, 2, 3, 4, 5].
Connect the ropes in the following manner:
1 + 2 = 3
3 + 3 = 6
4 + 5 = 9
6 + 9 = 15

	So, total cost to connect the ropes into one is 3 + 6 + 9 + 15 = 33. Explanation 2: Given array A = [5, 17, 100, 11]. Connect the ropes in the following manner: 5 + 11 = 16 16 + 17 = 33 33 + 100 = 133 So, total cost to connect the ropes into one is 16 + 33 + 133 = 182.	
2	• **Use appropriate comment lines to divide subprograms.** • **Also demonstrate the program with one example test case. (Example test input and output are given)** **PART - A** → **Using map function,** write a Python program to convert the given list into a tuple of strings. For the given input, the program must print the output as shown below - Input – [1,2,3,4] Output – ('1','2','3','4') **PART - B** → Write a Python program that multiply each number of the given list with 10 **using lambda function.** For the given input, the program must print the output as shown below - Input – [1,2,3,4] Output – [10,20,30,40] **PART - C** → Write a Python program that multiply all elements of the given list **using reduce function** and return the product. For the given input, the program must print the output as shown below - Input – [1,2,3,4] Output – 24 (which is 1*2*3*4) **PART - D** Write a Python program satisfying following conditions - → Create a python function countchar() that count the character of a string in a given string **without using inbuilt functions.** For the given input, the program must print the output as shown below - Given input string – 'hello' countchar('l') Output : 2 → Create a python function findchar() that find the index of first occurrence of a character in a given string **without using inbuilt functions.** It should return -1 if it does not find the character. For the given input, the program must print the output as shown below - Given input string – 'helloe' findchar('e') Output : 1	**[09]**

findchar('z')
Output : -1

3 Write a python Program to check entered password by user is correct or not. Entered password is correct if it has upper character, lower character , digits (but not more than 3 digits) ,special character and length is greater than or equal to eight and less than equal to fifteen. Get the digits from entered password and convert it in to number and then convert it in to English Word . **[9]**

Example:
case 1
pw= R@m@3fa1tu9e$
Valid Password
num= 319
three hundred and nineteen

case 2
pw= S@m@6a1tue$
Valid Password
num= 61
sixty-one

case 3
pw= S@m@6a26u8$
Invalid Password

4 One of the ways to encrypt a string is by rearranging its characters by certain rules, they are broken up by threes, fours or something larger. For instance, in the case of threes, the string '**secret message'** would be broken into three groups. The first group is **sr sg**, the characters at indices **0, 3, 6, 9 and 12**. The second group is **eemse**, the characters at indices **1, 4, 7, 10, and 13**. The last group is **ctea**, the characters at indices **2, 5, 8, and 11**. The encrypted message is **sr sgeemsectea**. **[09]**

INDEX	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
STRING Given by User	**s**	**e**	**c**	**r**	**e**	**t**		**m**	**e**	**s**	**s**	**a**	**g**	**e**
Key Given by User	**3**		Given String will be divided in 3 parts as given key is 3.											
	0	**3**	**6**	**9**	**12**	Encrypted String will be: First Part+Second Part+Third Part which is **sr sgeemsecteg**								
First Part	**s**	**r**		**s**	**g**									
	1	**4**	**7**	**10**	**13**									
Second Part	**e**	**e**	**m**	**s**	**e**									
	2	**5**	**8**	**12**										

Third Part	**c**	**t**	**e**	**g**		

If the string '**secret message'** would be broken into four groups. The first group is **seeg**, the characters at indices **0, 4, 8 and 12**. The second group is **etse**, the characters at indices **1, 5, 9 and 13**. The third group is **c s**, the characters at indices **2, 6 and 10**. The fourth group is **rma**, the characters at indices 3**, 7 and 11.** The encrypted message is **seegetsec srma**.

INDEX	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
STRING Given by User	**s**	**e**	**c**	**r**	**e**	**t**		**m**	**e**	**s**	**s**	**a**	**g**	**e**
Key Given by User	**4**		Given String will be divided in 4 parts as given key is 4.											
	0	**4**	**8**	**12**	Encrypted String will be: First Part+Second Part+Third Part+Fourth Part which is **seegetsec srma**									
First Part	**s**	**e**	**e**	**g**										
	1	**5**	**9**	**13**										
Second Part	**e**	**t**	**s**	**e**										
	2	**6**	**10**											
Third Part	**c**		**s**											
	3	**7**	**11**											
Fourth Part	**r**	**m**	**a**											

(A). Write a program that asks the user for a string, and an integer determining whether to break things up by threes, fours, or whatever user inputs. Encrypt the string using above method.

For example,
Input message: This is python, a programming language
Input Key: 4
Output Encrypted Message: T poaomgnghiyn gm geist,prilus h ranaa

Input message: This is python, a programming language
Input Key: 7
Output Message: T ,ggahp r giyaalest ma hpmniorigsnonu

(B). If you get a message which is encoded by the method above then**, Write a decryption program for the general case.** Taking input of any encrypted string from user with key number used while breaking message apart during encryption.

For example,
Input Encrypted message: **Hloe gl o sogrilw g epntstfii o yotay hee nnh aoiortiimreegehrun nhnse ne**
Input Key used during encryption: **5**
Output Decrypted Message: **Hi hello how are you going to learn python in this semester of engineering**

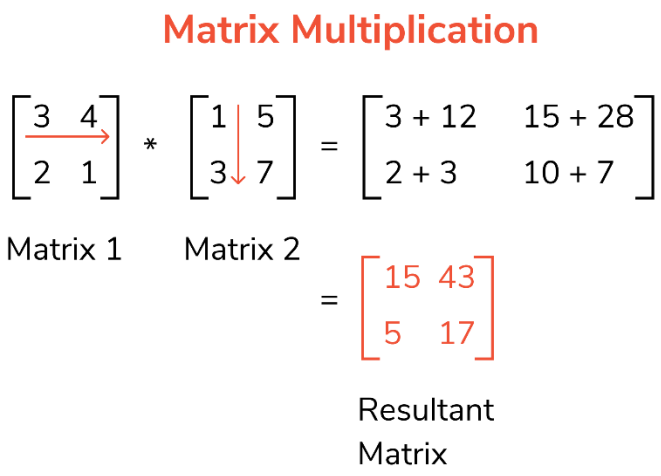
	Input Encrypted message: **Ig ntot oopid ys lt dehaaao yrn** Input Key used during encryption: **8** Output Decrypted Message: **It is a good day to learn python** Input Encrypted message: **istemoaa!t e ym ntt p eiohitlgs** Input Key used during encryption: **4** Output Decrypted Message: **it is not the time to play games!** **(C).** From the output string (Output Decrypted Message) of above program (Part-B)**, create a Dictionary with Key as First Character and Value as list of words Starting with that Character from above string. And print that dictionary by sorting it based on the number of elements in a list of values in descending order.** Note: **Consider capital and lower first character of words as same character in this program. For ex. 'Hi' and 'hello' both will be considered starting from 'h'.** For example, Enter Decrypted Message: **Hi hello how are you going to learn python in this semester of engineering** Output: **{'h': ['Hi', 'hello', 'how'], 't': ['to', 'this'], 'a': ['are'], 'y': ['you'], 'g': ['going'], 'l': ['learn'], 'p': ['python'], 'i': ['in'], 's': ['semester'], 'o': ['of'], 'e': ['engineering']}** Enter Decrypted Message: **It is a good day to learn python** Output: **{'i': ['It', 'is'], 'a': ['a'], 'g': ['good'], 'd': ['day'], 't': ['to'], 'l': ['learn'], 'p': ['python']}** Enter Decrypted Message: **it is not the time to play games!** Output: **{'t': ['the', 'time', 'to'], 'i': ['it', 'is'], 'n': ['not'], 'p': ['play'], 'g': ['games!']}**	
5	Write a python program to print all possible combinations from the three Digits and also count unique values inside a list and also find list product excluding duplicates and also find sum of list's elements excluding duplicates. **Examples:** **To print all possible combinations** Input: [1, 2, 3] Output: 1 2 3 1 3 2 2 1 3 2 3 1 3 1 2 3 2 1 **Count unique values inside a list** input = [1, 2, 3] No of unique items are: 3 input = [1, 2, 2] No of unique items are: 2 input = [2, 2, 2]	**[09]**

	No of unique items are: 3 **List product excluding duplicates** Input: [2, 3, 5] Duplication removal list product: 30 Input: [2, 2, 3] Duplication removal list product: 6 **Sum of list's elements excluding duplicates** Input: [1, 3, 5] Output: 9 Input: [1, 2, 2] Output: 3	
6	Write a Python program to make a **matrix calculator functionality** with following operations in it. Take user defined matrix. Also take choice from user defined whether to perform addition, subtraction or multiplication by taking choice as a string ("+", or "-", or "*". **Use of numpy is not allowed.** **1. Addition of two matrices.** **Addition Condition:** Addition of two matrices can be performed if the row size of both matrices is same and if the column size of both matrices is same. That is for example: 2 x 3 is the dimension of 1st matrix so the rowsize of 1st matrix will be 2 and columnsize of 1st matrix is 3 and 2 x 3 is the dimension of 2nd matrix here rowsize of 2nd matrix is 2 and columnsize of 2nd matrix is 3. Hence the rowsize of 1st matrix is equal to rowsize of 2nd matrix and Columnsize of 1st matrix is equal to columnsize of 2nd matrix. Hence addition can be performed otherwise it cannot be. The addition of two matrices is as performed below: $\begin{bmatrix}1&2&3\\4&5&6\\7&8&9\end{bmatrix} + \begin{bmatrix}9&8&7\\6&5&4\\3&2&1\end{bmatrix} = \begin{bmatrix}1+9&2+8&3+7\\4+6&5+5&6+4\\7+3&8+2&9+1\end{bmatrix}$ $= \begin{bmatrix}10&10&10\\10&10&10\\10&10&10\end{bmatrix}$ **2. Subtraction of two matrices.** **Subtraction Condition:** Subtraction of two matrices can be performed if the row size of both matrices are same and if the column size of both matrices are same. That is for example: 2 x 3 is the dimension of 1st matrix so the rowsize of 1st matrix will be 2 and columnsize of 1st matrix is 3 and 2 x 3 is the dimension of 2nd matrix here rowsize of 2nd matrix is 2 and columnsize of 2nd matrix is 3. Hence the rowsize of 1st matrix is equal to rowsize of 2nd matrix and Columnsize of 1st matrix is equal to columnsize of 2nd matrix. The subtraction of two matrices is as performed below:	**[09]**

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix} - \begin{bmatrix} 9 & 8 & 7 \\ 6 & 5 & 4 \\ 3 & 2 & 1 \end{bmatrix} = \begin{bmatrix} 1-9 & 2-8 & 3-7 \\ 4-6 & 5-5 & 6-4 \\ 7-3 & 8-2 & 9-1 \end{bmatrix}$$

$$= \begin{bmatrix} -8 & -6 & -4 \\ -2 & 0 & 2 \\ 4 & 6 & 8 \end{bmatrix}$$

3. **Multiplication of two matrices.**
   Multiplication Condition: If column size of 1st matrix is equal to row size of 2nd matrix is there then multiplication of two matrices can be performed.
   For example: 2 x 3 is the dimension of 1st matrix so the rowsize of 1st matrix will be 2 and columnsize of 1st matrix is 3 and 3 x 3 is the dimension of 2nd matrix here rowsize of 2nd matrix is 3 and columnsize of 2nd matrix is 3.
   Hence the columnsize of 1st matrix is equal to rowsize of 2nd matrix and
   Hence matrix multiplication can be performed else it cannot be.
   The matrix multiplication of two matrices is as performed below:



So message for each condition (addition, subtraction and multiplication) if it becomes invalid should be **"Dimension Mismatched!".**

Also print this test case:
Test Case 1: (addition condition checked)
Input:

Enter Row and Column Size of First Matrix: 3
3
Enter Row and Column Size of Second Matrix: 4
3
Enter the choice: + for addition, - for subtraction and * for multiplication
Enter the choice+

Output:

Dimension Mismatched!

Test Case 2: (Subtraction condition checked)

Input:

Enter Row and Column Size of First Matrix: 3
3
Enter Row and Column Size of Second Matrix: 4
3
Enter the choice: + for addition, - for subtraction and * for multiplication
Enter the choice-
Output:

Dimension Mismatched!

Test Case 3: (Multiplication condition checked)

Input:

Enter Row and Column Size of First Matrix: 3
3
Enter Row and Column Size of Second Matrix: 4
3
Enter the choice: + for addition, - for subtraction and * for multiplication
Enter the choice-
Output:

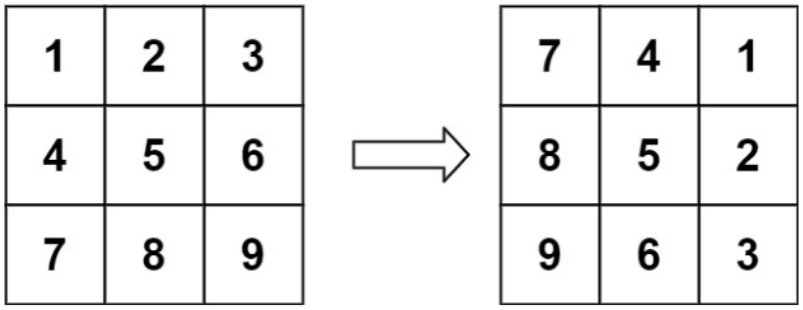
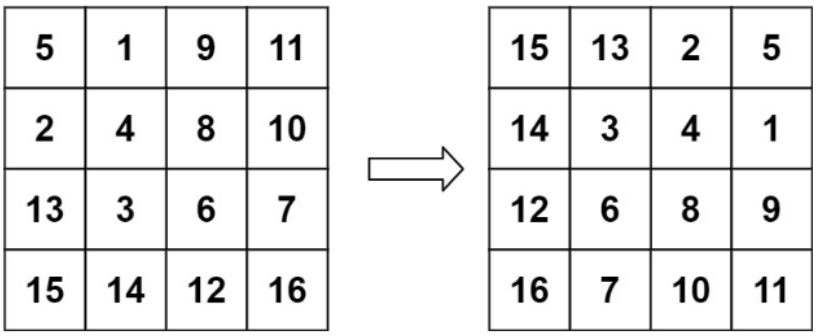
Dimension Mismatched!

Test Case 4:
Input: Enter Row and Column Size of First Matrix: 2
3
Enter Row and Column Size of Second Matrix: 2
3
Enter the choice: + for addition, - for subtraction and * for multiplication
Enter the choice+

Enter 6 Elements for First Matrix:
[[1, 2, 3], [4, 5, 6]]
Enter 6 Elements for Second Matrix:
[[1, 2, 3], [7, 8, 9]]

Output:
Addition Result:
2 4 6
11 13 15

Similarly for subtraction and multiplication all outputs should be printed one by one.
1 mark for taking user defined matrix
1 mark for checking addition condition and displaying invalid input
1 mark for addition logic of two matrices

	1 mark for subtraction condition 1 mark for subtraction logic of two matrices 1 mark for multiplication condition 1 mark for multiplication logic of two matrices 1 mark for output printing (complete 1 mark if all printed, else for 1 or 2 output printing 0.5 marks) 1 marks for nomenclature.	
7	A digital image in a computer is represented by a pixels matrix. Each image processing operation in a computer may be observed as an operation on the image matrix. Suppose you are given an N x N 2D matrix **A (in the form of a list)** representing an image. Write a Python program to rotate this image by **90 degrees (clockwise) by rotating the matrix 90 degree clockwise. Write proper code to take input of N from the user and then to take input of an N x N matrix from the user. Rotate the matrix by 90 degree clockwise and then print the rotated matrix.** **Note: You are not allowed to use an extra iterable like list, tuple, etc. to do this. You need to make changes in the given list A itself. Your program should be able to handle any N x N matrix from N = 1 to N = 20.** Examples: **Example 1:**  **Input:** matrix = [[1,2,3],[4,5,6],[7,8,9]] **Output:** [[7,4,1],[8,5,2],[9,6,3]] **Example 2:**  **Input:** matrix = [[5,1,9,11],[2,4,8,10],[13,3,6,7],[15,14,12,16]] **Output:** [[15,13,2,5],[14,3,4,1],[12,6,8,9],[16,7,10,11]]	**[09]**
8	Dr. Prasad is opening a new world class hospital in a small town designed to be the first preference of the patients in the city. Hospital has N rooms of two types – with TV and without TV, with daily rates of R1 and R2 respectively.	**[09]**

However, from his experience Dr. Prasad knows that the number of patients is not constant throughout the year, instead it follows a pattern. The number of patients on any given day of the year is given by the following formula –

(6-M)^2 + |D-15| ,

where M is the number of month (1 for jan, 2 for feb …12 for dec) and D is the date (1,2…31).

All patients prefer without TV rooms as they are cheaper, but will opt for with TV rooms only if without TV rooms are not available. Hospital has a revenue target for the first year of operation. Given this target and the values of N, R1 and R2 you need to identify the number of TVs the hospital should buy so that it meets the revenue target. Assume the Hospital opens on 1st Jan and year is a non-leap year.

Constraints

Hospital opens on 1st Jan in an ordinary year
5 <= Number of rooms <= 100
500 <= Room Rates <= 5000
0 <= Target revenue < 90000000

Input Format:

- First line provides an integer N that denotes the number of rooms in the hospital.
- Second line provides the rates of rooms with TV (R1).
- Third line provides the rates of rooms without TV (R2).
- Fourth line provides the revenue target.

Output:

Minimum number of TVs the hospital needs to buy to meet its revenue target. If it cannot achieve its target, print the total number of rooms in the hospital.

Test Case
Example-1 :
Input

20
1500
1000
7000000

Output

14

Explanation
Using the formula, the number of patients on 1st Jan will be 39, on 2nd Jan will be 38 and so on. Considering there are only twenty rooms and rates of both type of rooms are 1500 and 1000 respectively, we will need 14 TV sets to get revenue of 7119500. With 13 TV sets Total revenue will be less than 7000000

	Example-2 : **Input** 10 1000 1500 10000000 **Output** 10 **Explanation** In the above example, the target will not be achieved, even by equipping all the rooms with TV. Hence, the answer is 10 i.e. total number of rooms in the hospital.	
9	Write a python code to extract dictionary with digit value in K key, save all the digit values to a list. Then perform the following operations on that list. 1. Take that list and finds all pairs of integers that differ by three. 2. Return all pairs of integers in a list. Also do the sum of missing numbers of that list of integers. 3. Add all elements of that list of integers except the number at index. Return the new string. 4. Also find an element that divides a given list of integers with the same sum value. (1 mark to get a list and 2 marks for each operation)	**[09]**
10	Given a list L of size N. You need to count the number of special elements in the given list. An element is special if removal of that element makes the list balanced. The list will be balanced if sum of even index elements is equal to the sum of odd elements. Also print the updated lists after removal of special elements. **Example 1:** **Input:** L=[5, 5, 2, 5, 8] **Output:** Original List: [5, 5, 2, 5, 8] Index to be removed is: 0 List after removing index 0 : [5, 2, 5, 8] Original List: [5, 5, 2, 5, 8] Index to be removed is: 1 List after removing index 1 : [5, 2, 5, 8] Total number of special elements: 2 **Explaination:** If we delete L[0] or L[1], list will be balanced. [5, 2, 5, 8] (5+5) = (2+8) So L[0] and L[1] are special elements, So Count is 2. After removal of the special elements, list will be: [5, 2, 5, 8] **Example 2:** **Input:**	**[09]**

	L=[2,1,6,4] **Output:** Original List: [2, 1, 6, 4] Index to be removed is: 1 List after removing index 1 : [2, 6, 4] Total Number of Special elements: 1 **<u>Explaination:</u>** If we delete L[1] from list : [2,6,4] (2+4) = (6) Here only 1 special element. So Count is 1. After removal of special element, list will be : [2,6,4]	
11	d={"student0":'Student@0',"student1":'Student@11',"student2":'Student@121', "student3":'Student@052',"student4":'Student@01278',"student5":'Student@0125', Student6":'Student@042', "student7":'Student@07800',"student8":'Student@012', "student9":'Student@04789'} Write a python program to update the password of any user given the above dictionary(d) which stores the username as the key of the dictionary and the username's password as the value of the dictionary. print the updated dictionary and print the username and password according to ascending order of password length of the updated dictionary. For the password updating of that username follow some instructions. ➢ Give the three chances to user enter the correct username and password. If the user does not enter the correct username and password then display "enter correct password and username". if the user does not enter the correct username and password in a given three chances then display "enter correct password and username" and "try after 24h" ➢ If the user enters the correct username and password in a given three chances. Give the three chances to user enter a new password to update the password of that username. If the user enters a new password not follow the below format, then display "follow the password format". if the user does not enter the password in a given format in a given three chances, then display "follow the password format" and "try after 24h" **The check, of whether the new password format is correct or wrong makes the user define a function. That user define a function to return True or False for password valid or not. That user define function return value used in this program for new password validation.** o New password must have the below format: 1. at least 1 number between 0 and 9 2. at least 1 upper letter (between a and z) 3. at least 1 lower letter (between A and Z) 4. at least 1 special character out of @$_ 5. minimum length of the password is 8 and the maximum length is 15 6. Do not use space and other special characters. Only uses @$_ ➢ If the new password follows the format of the password in a given three chances. then print the updated dictionary and print the username and password according to ascending order of password length of an updated dictionary. If the dictionary is not updated then take the old dictionary	**[09]**

EXAMPLE1:

enter correct username:student0
enter correct password:Student@0
enter update password: Student@xc2345
{'student0': 'Student@xc2345', 'student1': 'Student@11', 'student2': 'Student@121', 'student3': 'Stud
ent@052', 'student4': 'Student@01278', 'student5': 'Student@0125', 'student6': 'Student@042', 'stud
ent7': 'Student@07800', 'student8': 'Student@012', 'student9': 'Student@04789'}
the username and password according to ascending order of password length
student1 : Student@11
student2 : Student@121
student3 : Student@052
student6 : Student@042
student8 : Student@012
student5 : Student@0125
student4 : Student@01278
student7 : Student@07800
student9 : Student@04789
student0 : Student@xc2345

EXAMPLE2:

enter correct username:student1
enter correct password:Student@0
enter correct username and password
enter correct username:student1
enter correct password:Student@1
enter correct username and password
enter correct username:student1
enter correct password:Student@11
enter update password: Student@X1111
{'student0': 'Student@0', 'student1': 'Student@X1111', 'student2': 'Student@121', 'student3': 'Studen
t@052', 'student4': 'Student@01278', 'student5': 'Student@0125', 'student6': 'Student@042', 'student
7': 'Student@07800', 'student8': 'Student@012', 'student9': 'Student@04789'}
the username and password according to ascending order of password length
student0 : Student@0
student2 : Student@121
student3 : Student@052
student6 : Student@042
student8 : Student@012
student5 : Student@0125
student1 : Student@X1111
student4 : Student@01278
student7 : Student@07800
student9 : Student@04789

EXAMPLE3:

enter correct username:student0
enter correct password:Styi
enter correct username and password
enter correct username:Student00
enter correct password:Student@0
enter correct username and password
enter correct username:student0
enter correct password:Student@00
enter correct username and password
try after 24h

{'student0': 'Student@0', 'student1': 'Student@11', 'student2': 'Student@121', 'student3': 'Student@0
52', 'student4': 'Student@01278', 'student5': 'Student@0125', 'student6': 'Student@042', 'student7': '
Student@07800', 'student8': 'Student@012', 'student9': 'Student@04789'}
the username and password according to ascending order of password length
student0 : Student@0
student1 : Student@11
student2 : Student@121
student3 : Student@052
student6 : Student@042
student8 : Student@012
student5 : Student@0125
student4 : Student@01278
student7 : Student@07800
student9 : Student@04789

Example 4:

enter correct username:student@0
enter correct password:Student@0
enter correct username and password
enter correct username:student0
enter correct password:Student@0
enter update password: vfgtrf
follow the password format
enter update password: hgtyuh
follow the password format
enter update password: jhyuuh
follow the password format
try after 24h
{'student0': 'Student@0', 'student1': 'Student@11', 'student2': 'Student@121', 'student3': 'Student@0
52', 'student4': 'Student@01278', 'student5': 'Student@0125', 'student6': 'Student@042', 'student7': '
Student@07800', 'student8': 'Student@012', 'student9': 'Student@04789'}
the username and password according to ascending order of password length
student0 : Student@0
student1 : Student@11
student2 : Student@121
student3 : Student@052
student6 : Student@042
student8 : Student@012
student5 : Student@0125
student4 : Student@01278
student7 : Student@07800
student9 : Student@04789

Example 5:

enter correct username:stydent0
enter correct password:Student@0
enter correct username and password
enter correct username:student0
enter correct password:Student@0
enter update password: Student@XX
follow the password format
enter update password: Student@XX34
{'student0': 'Student@XX34', 'student1': 'Student@11', 'student2': 'Student@121', 'student3': 'Stude
nt@052', 'student4': 'Student@01278', 'student5': 'Student@0125', 'student6': 'Student@042', 'stude
nt7': 'Student@07800', 'student8': 'Student@012', 'student9': 'Student@04789'}
the username and password according to ascending order of password length

student1 : Student@11
student2 : Student@121
student3 : Student@052
student6 : Student@042
student8 : Student@012
student0 : Student@XX34
student5 : Student@0125
student4 : Student@01278
student7 : Student@07800
student9 : Student@04789

Example 6:

enter correct username:student0
enter correct password:Student@0
enter update password: Styugt
follow the password format
enter update password: styuhnjk
follow the password format
enter update password: srtyui
follow the password format
try after 24h
{'student0': 'Student@0', 'student1': 'Student@11', 'student2': 'Student@121', 'student3': 'Student@052', 'student4': 'Student@01278', 'student5': 'Student@0125', 'student6': 'Student@042', 'student7': 'Student@07800', 'student8': 'Student@012', 'student9': 'Student@04789'}
the username and password according to ascending order of password length
student0 : Student@0
student1 : Student@11
student2 : Student@121
student3 : Student@052
student6 : Student@042
student8 : Student@012
student5 : Student@0125
student4 : Student@01278
student7 : Student@07800
student9 : Student@04789