



Time: 3 Hrs.

Answer All Questions

Max Marks: 100

1	a	<p>Indicate the output or reason for error if any.</p> <pre>print("text") print("25" / "5") a = 10; b = 0; print(str(a) * b) a = 10; b = 10; print(a == b) a = 10; print(++a)</pre>	5
	b	<p>Find the output in each case.</p> <pre>x = 100; y = x; y = 200; print(x) x = [100, 200]; y = x; y = [300, 400]; print(x) x = [100, 200]; y = x; y.extend([300, 400]); print(x) x = [100, [200]]; y = x; y[0] = [300, 400]; print(x) x = [100, 200]; y = x; y += [300, 400]; print(x)</pre>	5
	c	<p>Evaluate these expressions.</p> <pre>5 == 5 == 5 (2 + 3, 3 + 2) * 2 2 * "25" True and True or not True 5 in range(5)</pre>	5
	d	<p>Find the type of the following expressions if the expression is valid. Otherwise indicate the error.</p> <pre>(-25) ** 0.5 "pes"[1] {"x": 25, 25 : "y"}[25] == 'x' {} set({})</pre>	5
2	a	<pre>n = int(input("enter a number:")) s = 0 while n : if n % 2 : s += 1 n >= 1 print(s)</pre> <p>Find the output for the following inputs</p> <ul style="list-style-type: none"> i) 25 ii) 15 <p>What does the program do?</p>	5
	b	<p>Write a program to find the biggest number in the geometric progression with start value a and common ratio r less than a given number n.</p> <p>Inputs are a, r and n.</p> <p>Hint: geometric progression has the terms a, ar, ar², ar³ ..</p>	5

	c	<pre> n = int(input("enter a number:")) i = 2 while n > 1 : while n % i == 0 : print(i, end = " ") n //= i i += 1 print() </pre> <p>Find the output for the following inputs.</p> <p>i) 54 ii) 24</p> <p>What does the program do?</p>	5
	d	<p>Write a program to generate the following pattern for a given value of n.</p> <p>If n = 4, then the expected output is:</p> <pre> 4 4 4 4 4 3 3 3 4 3 2 2 4 3 2 1 </pre>	5
3	a	<p>Find the output.</p> <pre> a = [] for i in range(4): a.append([]) for j in range(i + 1): a[i].append(j * j) print(a) </pre>	4
	b	<p>Write a program segment to achieve the following.</p> <p>Create a dictionary of lists given two lists.</p> <p>Input:</p> <pre> a = ['karnataka', 'tamilnad', 'karnataka', 'karnataka', 'tamilnad', 'kerala'] b = ['mysore', 'chennai', 'hassan', 'shimoga', 'madurai', 'trivandrum'] </pre> <p>Output:</p> <pre> d = { 'karnataka' : ['mysore', 'hassan', 'shimoga'], 'tamilnad' : ['chennai', 'madurai'], 'kerala' : ['trivandrum'] } </pre>	5
	c	<p>Find the resultant set. Display the elements.</p> <p>i) set("1234") ii) set(("1234")) iii) set(("12", "34")) iv) set(set("1234")) v) set("12" + "34")</p>	5
	d	<p>Write a program to decode ['m', 'i', 's', (2, 1), (1, 1), (2, 3), 'p', (8, 1), (1, 1)] as mississippi.</p> <p>If it is a character, that itself is the decoded form.</p> <p>If it is a tuple, in the decoded string so far, the first is the position and the second is the length of the string.</p>	6

	<p>ex: decoded string : empty</p> <p>m => m</p> <p>i => mi</p> <p>s => mis</p> <p>(2, 1) => miss # char in position 2 which is s repeated once</p> <p>(1, 1) => missi</p> <p>(2, 3) => mississi # string in position 2 of length 3 from the previous decoded string : ssi</p>	
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4	a	<p>Write a function that accepts a comma separated sequence of words as argument and returns a string which contains the words in a comma-separated sequence after sorting the words alphabetically.</p> <p>def foo(s): pass # TODO For Ex: foo("hi,how,are,you?") should return "are,hi,how,you?"</p>	4
	b	<p>def foo(x, y) : z = 0 for i in x : for j in y : z += 1 return z</p> <p>What happens in the following calls?</p> <pre>print(foo((1, 2, 3), (4, 5))) print(foo({ 10 : "ten", 20 : "twenty" }, { 30 : "thirty" }))</pre>	4
	c	<p>Given two lists of integers a and b, write single liners to achieve the following.</p> <p>i) Check whether the sum of the elements of a is greater than the sum of the elements of b. Evaluate to True if this condition is True otherwise False.</p> <p>ii) Generate a list of integers complementing each element in the given list with respect to 100. if the element in a is 25, the corresponding element in the resultant list should be 75.</p> <p>iii) Generate the product of all elements of the list a</p>	6
	d	<p>Indicate no output or actual output for each of the statements following the class definition.</p> <p>class A: def __init__(self): print("ctor") def __del__(self): print("dtor") x = A() y = x z = A() del x y = 111 x = 222</p>	6
5	a	<p>i) Use list comprehension to walk through a list of points - each point expressed as a pair of coordinates and find all the points in the first quadrant excluding those on the axes.</p> <p>ii) Find the output when test.py is executed as python test.py.</p> <p>File: abc.py print('three : ', __name__)</p>	<p>3</p> <p>3</p>

	File: test.py print('one') import abc print('two : ', __name__)	
b	What is the output with and without the statements marked X? def foo(): try: print("ondu") print(gottilla) print("eradu") except NameError: #X print("mooru") #X except KeyError: print("nalku") print("idu") print("three") foo() print("aaru")	4
c	If f1 and f2 are file objects opened for reading, what would the following expression give? set(f1) and set(f2)	3
d	i) Find the output. class A: def __iter__(self): self.x = 0 return self def __next__(self): self.x += 1 return self.x a = A() x = iter(a) y = iter(a) print(next(x)) print(next(y)) print(next(x)) ii) Find the output. def gen(): while True: yield True yield False g = gen() for i in range(4): print(next(g))	3 + 4