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B.E. Semester-VI April-2017 (CE/IT)

Date: 26/04/2017 **Total Marks: 70**

Time: 10:00 AM to 1:00 PM **Subject Code: CE/IT 605-3**

PYTHON PROGRAMMING

Instructions:

1. Answer each section in separate Answer sheet.
2. Use of scientific calculator is permitted.
3. All questions are **Compulsory**.
4. Indicate **clearly**, the options you attempt along with its respective question number.
5. Use the last page of main supplementary of **rough work**.

Section - I

Q-1 (A) Give the output/error of following code. [10]

1)
```
def C2F(c):
    return c * 9/5 + 32
print C2F(100)
print C2F(0)
```

2)
```
m = [[x, x + 1, x + 2] for x in range(0, 3)]
print m
```

3)
```
points = [ [1,2], [3,1.5], [0.5,0.5] ]
points.sort()
print points
```

4)
```
elements = [0, 1, 2]
def incr(x):
    return x+1
result = list(map(elements, incr))
print result
```

5)
```
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
```

Q-1 (B) Explain the features of python. [5]

OR

(B) Discuss modules with suitable example. [5]

Q-2 Answer the following questions.

(A) Write a Python program to check if a given positive integer is a power of two. [5]

(B) Write a Python program to find three numbers from list such that the sum of three numbers equal to zero. [5]

Input : [-1,0,1,2,-1,-4]

Output : [[-1, -1, 2] , [-1, 0, 1]]

OR

	(A)	Write a Python program to find the single element in a list where every element appears three times except for one. Input : [5, 3, 4, 3, 5, 5, 3] Output : 4	[5]
	(B)	Explain string indexing and slicing using an example.	[5]
Q-3	**Answer the following questions.**		
	(A)	Explain any two functions of tuple with an example.	[5]
	(B)	Define a class, which have a class parameter and have a same instance parameter.	[5]
		OR	
	(A)	Explain any two functions of dictionary with an example	[5]
	(B)	Explain exception handling with the help of an example.	[5]

Section - II

Q-4	(A)	**Give the output/error of following code.**	[10]

	1)	def f(x,l=[]):
		  for i in range(x):
		  l.append(i*i)
		  print(l)
		
		f(2)
		f(3,[3,2,1])
			[2]

	2)	values = [[3, 4, 5, 1], [33, 6, 1, 2]]
		v = values[0][0]
		for row in range(0, len(values)):
		  for column in range(0, len(values[row])):
		  if v < values[row][column]:
		  v = values[row][column]
		print v
			[2]

	3)	data = [[[1, 2], [3, 4]], [[5, 6], [7, 8]]]
		def ttt(m):
		  v = m[0][0]
		  for row in m:
		  for element in row:
		  if v < element: v = element
		  return v
		
		print (ttt (data[0]))
			[2]

	4)	x = [12.1, 34.0] print (len(' '.join(list(map(str, x))))))	[2]

	5)	try:
		  if '1' != 1:
		  raise "someError"
		  else:
		  print("someError has not occured")
		except "someError":
		  print "someError has occured"
			[2]

Q-4	(B)	Define a class which has at least two methods: getString: to get a string from console input printString: to print the string in upper case. Also please include simple test function to test the class methods.	[5]
		OR	
	(B)	Write a program that accepts sequence of lines as input and prints the lines after making all characters in the sentence capitalized. Suppose the following input is supplied to the program: Hello world Practice makes perfect Then, the output should be: HELLO WORLD PRACTICE MAKES PERFECT	[5]
Q-5	**Answer the following questions.**		
	(A)	Give the syntax, use and example of difference() and symmetric_difference().	[5]
	(B)	What is the use of class method? How it can be declared and used in python program?	[5]
		OR	
	(A)	Read a text file in python and do following: i. print no. of lines ii. print no. of statements iii. print no. of unique words store each word with its occurrence in dictionary	[5]
	(B)	Write a python program to remove duplicate values using user defined function.	[5]
Q-6	**Answer the following questions.**		
	(A)	The majority element is the element that appears more than n/2 times in a list where n is the number of elements in the list. Write a Python program to find the majority elements in a list. Print appropriate message if not any. Input : [1, 2, 3, 4, 5, 5, 5, 5, 5, 5, 6] Output : 5	[5]
	(B)	Write a program that accepts a sentence and calculate the number of letters and digits. Suppose the following input is supplied to the program: Hello world! 123 Then, the output should be: LETTERS 10 DIGITS 3	[5]
		OR	
	(A)	Write a python program to find whether the given number is armstrong or not.	[5]
	(B)	Describe Python's garbage collection mechanism in brief.	[5]
		------- All the Best---------	