**SRM UNIVERSITY**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**IT1140**

**CYCLE TEST –I**

**Evaluation Sheet**

**BRANCH/YEAR: IT / III DATE:03-03-2017**

**SEM: VI MARKS: 50**

|  |  |  |  |  |  |  |  |  |  |
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**Reg No.**

**List of Instructional Objectives covered in this Test:**

IO1. Able to setup Python working environment

IO2. Understand the object oriented features of Python

**Outcomes covered in this test:**

1. An ability to use current techniques, skills, and tools necessary for computing practice(outcome i)

i1. An ability to understand current techniques and Skills

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Question No** | **Instructional Objective** | **Course Outcome** | **Marks Scored** | **Outcome Met Yes/No** |
| 1 | Io1 | i1 |  |  |
| 2 | Io2 | i1 |  |  |
| 3 | Io2 | i1 |  |  |
| 4 | Io2 | i1 |  |  |
| 5 | Io2 | i1 |  |  |
| 6 | Io2 | i1 |  |  |
| 7 | Io2 | i1 |  |  |
| 8 | Io2 | i1 |  |  |

**Total Marks: /50**

**Signature:**

**IT1140 PYTHON PROGRAMMING**

**SRM University, Kattankulathur**

**Cycle Test –I**

**Semester: VI Total Marks: 50**

**Time duration: 1 hour 30 min Date: 03-03-2017**

**Set A**

**Part-A ANY 5 (5\*4=20)**

1. List four applications which use python

2. Create a dictionary with words and its synonyms. Get user input as a word and display the synonym if the word is present in dictionary else display ‘not available’ (use built in function)

3. Differentiate instance variable and class variable with suitable python code

4. Let the list be [‘python’,’morning’,’lovely’,’since12’,’123’]. If the ending chars of the elements are ‘ing’ then replace it with ‘ly’ and vice versa else just print. Ignore the element if it contains alphanumeric or numeric. Write the corresponding output. Use built-in functions where ever necessary

5. Write a python script to check the following.

i) Get an input from the user and check whether it is a file or directory

ii) Get a path from the user and check whether the path exists or not.

6. Differentiate match(), search() and findall() in ‘re’ module and give its syntax

**Part- B (2x15=30)**

7. i) Create two base classes car and four\_wheeler. A car can have further classification such as an open car, small car, big car (create derived classes)etc, which will acquire the properties from both Four Wheeler and Car, but will still have some specific properties. Demonstrate multiple inheritance using above scenario **(15 marks)**

**OR**

7. ii) a) Write a function findButNotAfter(source, prefix, pattern) which returns the index of the first occurrence of 'pattern' in 'source' that is NOT immediately after an occurrence of 'prefix'. For example, findButNotAfter('abcdcd', 'ab', 'cd') returns 4, since the first occurrence of 'cd' comes immediately after an 'ab', but findButNotAfter('abxcdcd', 'ab', 'cd') returns 3. **(8 marks)**

 b) The international standard letter/number mapping for telephones is:



Write a python script that prompts the user to enter a phone number as a string. The input number may contain letters. The program translates a letter (uppercase or lowercase) to a digit and leaves all other characters intact. Here is a sample run of the program **(7 marks)**

Enter a String: +91-wlxsAoiqdt

+95-9597264738

Enter a string:+91-Strawberry

+91-7872923779

8.i) a) Create a class ‘person’ which has three methods get\_details(), validation(), display\_details(). In get\_details() get the name, phone number and email id of the user. Validate the email id and phone number by calling validation function and store the result in a instance variable. Display\_details() should display the details entered by the user along with the validation result. **(12 mark)**

 b) Write the steps in execution of a Python program **(3 marks)**

**OR**

8.ii) a) Create a class ‘complex ‘ and create two instance variable ‘real’ and ‘imginary’ .

Overload the operators ‘+’ and ‘-‘ to perform complex number operation.

Note: Should perform using operator overloading only . **(10 marks)**

 b) Explain factory method with an example **(5 marks)**

**DEPARTMENT OF INFORMATION TECHNOLOGY, SRM UNIVERSITY**

**Cycle Test-1**

**IT1140 – PYTHON PROGRAMMING**

**YEAR / SEM: III / VI Date: 03-03-17**

**Time: 8.00am-9.40am Max. Marks: 50**

**SET B**

 Part-A-(5\*4=20)

 (Answer any five questions)

1. Write a Python program to get the top three items in a shop.

**Sample data:** {'item1': 45.50, 'item2':35, 'item3': 41.30, 'item4':55, 'item5': 24}
**Expected Output:**item4 55
item1 45.5
item3 41.3

1. Write a Python program to construct the following pattern, using a nested for loop.

\*
\* \*
\* \* \*
\* \* \* \*
\* \* \* \* \*
\* \* \* \*
\* \* \*
\* \*
\*

1. Write a Python program that accepts a string and calculate the number of digits and letters
2. Write a Python program to replace last value of tuples in a list.
**Sample list**: [(10, 20, 40), (40, 50, 60), (70, 80, 90)]
**Expected Output:** [(10, 20, 100), (40, 50, 100), (70, 80, 100)]
3. Write a Python program that matches a string that has an 'a' followed by anything, ending in 'b'.
4. Explain how the python program is interpreted?

 Part-B (2\*15=30)

1. a) Create a program that sums all of the numbers entered by the user while handling exceptions for any invalid entries or non-numbers. Program should handle exception and exit the program after displaying an appropriate error message when a non-number is entered. The program displays the current sum after each number is entered

b) Write a Python program to count the number of characters (character frequency) in a string.
**Sample String:** google.com
**Expected Result:** {'o': 3, 'g': 2, '.': 1, 'e': 1, 'l': 1, 'm': 1, 'c': 1}

 (Or)

b) Explain any 10 methods in strings with appropriate example and explanation

1. a)i)Explain two different ways of importing a module with an example(5)

 ii) Explain the identifiers and modifiers available for regular expression in python (6)

 iii)Write a Python program to calculate the value of 'a' to the power 'b' using a recursive function (4)

*Test Data*:
(power (3, 4) -> 81

 (Or)

b) Get a string as input from the user and the sub string to be searched also from the user. Find and list the index positions of the sub string and also the number of occurrences of the sub string.

**DEPARTMENT OF INFORMATION TECHNOLOGY, SRM UNIVERSITY**

**Cycle Test-1**

**IT1140 – PYTHON PROGRAMMING**

**YEAR / SEM: III / VI Date: 03-03-17**

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**SET C**

 **Part-A(5\*4=20)**

1. Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead. If the string length of the given string is less than 3, leave it unchanged

Sample String : 'abc'
Expected Result : 'abcing'
Sample String : 'string'
Expected Result : 'stringly'

1. Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are square of keys
2. Write a Python program that accepts a word from the user and reverse it
3. Write a Python program to convert a list of multiple integers into a single integer.
Sample list: [11, 33, 50]
Expected Output: 113350
4. Write a Python program to get the factorial of a non-negative integer
5. List four application which uses python language

 Part-B (2\*15=30)

1. a) Create a python script which gets name, phone number , address, email id, postal code from user and check for pattern using regular expression. Print accepted if pattern is correct else print patter is wrong. Hint: Use regular expression

Note:Postal code should be of 6 numbers and starts only with 6

 Email id should have alpha numeric followed by @ followed by alpha then ‘.’ then alpha

 Phone number should be of length 10 prefix by +91-

(Or)

b) i) Write a built in function for following actions?

* 1. To change the case of string
	2. To find whether there is a number in a string
	3. To find whether there is special character in string

 ii) Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle

iii) Give the output for the following

Dict={‘one’:1,’two’:2,’three’:3}

* 1. Print dict.get(‘one’)
	2. Print dict.get(‘four’)
	3. Print dict.has\_key(‘three’)

2.i)The function remove\_all takes two arguments: a list and an item you want to completely remove from the list. If the item occurs in the list multiple times, every instance of it is removed. If the item does not occur in the list, the list remains unmodified

 (Or)

ii)Write a student management system using python script which has following features

 a) Base class student contains two method to get personal detail from the user and prints the detail

 b) create two derived classes CSE and IT which gets the mark of three subjects from the user and calculates the total and grade accordingly