NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B. Tech.

SEM: I - CARRY OVER THEORY EXAMINATION (2020 - 2021)

Subject: Problem Solving using Python

Time: 03:00 Hours   Max. Marks: 100

General Instructions:

- ○ All questions are compulsory. It comprises of three Sections A, B and C.
- ○ Section A - Question No- 1 is objective type question carrying 1 mark each & Question No- 2 is Very short type questions carrying 2 marks each.
- ○ Section B - Question No- 3 is Long answer type - 1 questions carrying 6 marks each.
- ○ Section C - Question No- 4 to 8 are Long answer type -2 questions carrying 10 marks each.

1. Attempt all parts:-

1-a. What is the output of the following code :   (CO1)   1

```
print (9//2)
```

      1. 4.5

      2. 4

      3. 4.0

      4. None

1-b. Select the right way to create a string literal `Rama's City`   (CO1)   1

      1.

```
str1 = 'Rama\\'s City'
```

      2.

```
str1 = 'Rama\'s City'
```

      3.

```
str1 = 'Rama's City'
```

      4.

```
str1 = '''Rama\\'s City'''
```

1-c. What is the output of the following for loop and range() function   1

```
for num in range(-2,-5,-1):
    print(num, end=", ")
```

      1. -2, -1, -3, -4

      2. -2, -1, 0, 1, 2, 3

      3. -2, -1, 0

      4. -2, -3, -4

1-d. What is the output of the following if statement   1

```
a, b = 12, 5
if a + b:
    print('True')
else:
  print('False')
```

        1. True

        2. False

        3. 17

        4. Error

1-e.   What is the output of the following function call   1

```
def outerFun(a, b):
    def innerFun(c, d):
        return c + d
    return innerFun(a, b)
    return a

result = outerFun(5, 10)
print(result)
```

        1. 5

        2. 15

        3. (5, 15)

        4. (15, 5)

1-f.   What is the output of the add() function call   1

```
def add(a, b):
    return a+5, b+5

result = add(3, 2)
print(result)
```

        1. 15

        2. 8

        3. (8, 7)

        4. Syntax Error

1-g.   Select correct ways to create an empty dictionary   1

        1. sampleDict = {}

        2. sampleDict = dict()

        3. sampleDict = dict{}

        4. Both option 1 and 2 are correct

1-h.   Choose the correct function to get the ASCII code of a character   1

        1. char('char')

        2. ord('char')

3. ascii('char')

4. code('char')

1-i.   To open a file c:\scores.txt for appending data, we use _____   1

      1. outfile = open("c:\\scores.txt", "a")

      2. outfile = open("c:\\scores.txt", "rw")

      3. outfile = open(file = "c:\scores.txt", "w")

      4. outfile = open(file = "c:\\scores.txt", "w")

1-j.   When will the else part of try-except-else be executed?   1

      1. always

      2. when an exception occurs

      3. when no exception occurs

      4. when an exception occurs in to except block

2. Attempt all parts:-

2.a.   What is nested Loop?   2

2.b.   Write a program to display the last digit of a number.   2

2.c.   What is the advantage of recursion as compared to iteration?   2

2.d.   Write a python program to find length of word in a string .   2

2.e.   Explain the advantage of binary search over linear search.   2

3. Answer any five of the following-

3-a.   A student will not be allowed to sit in exam if his/her attendence is less than 75%.   6
Take following input from user
Number of classes held
Number of classes attended.
Write a Python program to print percentage of class attended and student is allowed to sit in exam or not.

3-b.   Write short notes on Conditional statement and Loop statement.   6

3-c.   Write a Python Program to Find HCF of two numbers.   6

3-d.   Write a Python program to count number of digits in a number entered by user.   6

3.e.   Write short notes on: 6
(a.) Keyword Arguments
(b.) Default Arguments
(c.) Lambda functions

3.f.   write a python program to find sum of all even numbers in the list where list element is   6
enterd by user.

3.g.   Write a program in python to implement the linear search where element is searched upon   6
from the end.

4. Answer any one of the following-

4-a.   Write an algorithm and design a flow-chart to find greatest among three numbers.   (CO1)   10

4-b.   What do you mean by mutable and immutable object. Explain All mutable and immutable   10
data types in python with example using syntax .   (CO1)

5. Answer any <u>one</u> of the following-

5-a.   When should we use nested if statement? Illustrate your answer with the help of an example.   10

5-b.   With the help of a suitable example, Illustrate the utility of break, continue and pass statement.   10

6. Answer any <u>one</u> of the following-

6-a.   What are packages? Give an example of package creation in Python. Write a small code to illustrate the use of package in Python.   10

6-b.   Describe the difference between Python os and os.path modules. Also, discuss the following methods of os module with their syntax
a) chdir() b) rmdir() c) mkdir() d) listdir() e) getcwd()   10

7. Answer any <u>one</u> of the following-

7-a.   Write a Program to generate Fibonacci sequence and store it in a list. Then find the sum of odd number.   10

7-b.   Explain all methods used in dictionary with example.   10

8. Answer any <u>one</u> of the following-

8-a.   Write a program in python to count the number of words, lines and characters in the given file.   10

8-b.   Define file. Explain the need if file handling. Also explain the various file openening modes with suitable example.   10