DO NOT WRITE ANYTHING ON QUESTION PAPER EXCEPT YOUR NAME, DEPARTMENT AND ENROLMENT No.

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Name of Student ---------- Enrolment No. ----------

Department ---------- Branch:----------

BENNETT UNIVERSITY, GREATER NOIDA

End Term Examination, FALL SEMESTER 2018-19

COURSE CODE: ECSE103L/ ECSE105L MAX. DURATION: Two HOUR

COURSE NAME: Computational Thinking Using Programming

COURSE CREDIT: 5 MAX. MARKS: 30

Note – All questions are compulsory

Question 1. Multiple choice question, only one option is correct. [4*1= 4 Marks]

A Which line will not throw any error?

1. mytuple = (8,9,"abc", [8, 4], (1, 2))
2. mytuple[0]=4
3. mytuple[2]="cat"
4. mytuple[4][0]=40

A. line 2
B. line 3
C. line 4
D. None of above

B Consider following one line code
fd= open('file.txt', 'r+')

What operation we can perform with the 'file.txt' file?

A. Only read
B. Only write
C. Read and write both
D. None of above

C Which of the following function is used to find ASCII value of a character?

A. char()
B. str()
C. ord()
D. int()

D What is the right way to inherit the parent class? Suppose A is parent class and B is child class.

A. class A:B:
B. class B:A:
C. class B(A):
D. class A(B):
E. None of above

Question 2. Write note on any three of the following with suitable examples: [3*2=6 Marks]

(a) Tuple
(b) Class and Object
(c) Operator Overloading
(d) Difference between write and append mode in a text file

Question 3. Write the steps for converting: [2*1=2 Marks]

(a) $(4734)_8 = (?)_{16}$
(b) $(197)_{16} = (?)_{10}$

Question 4. Evaluate the following expressions step by step: [2*1=2 Marks]

(a) (23+3|4) or (56*3-6)
(b) 4%5+8^6>>2

Question 5. Find the output of the following. If there is error in code, then write the erroneous line and give justification. [4*1=4 Marks]

A

```
A = {1, 2, 3, 4, 5}
B = {4, 5, 6, 7, 8}
print(A | B)
print(A - B)
print(A.difference(B))
```

B

```
dicti = {1: 'apple', 2: 'ball', 3: 'Hello'}
dicti[4]="1234"
print(dicti)
dicti = {1: 'apple', 2: 'ball', 3: 'ball', 3:
'abc'}
print(dicti)
```

C

```
lst1=[3,4,5,6,7]
lst2=lst1
lst3=lst1[:]
lst2[2]=20
print(lst1)
print(lst2)
print(lst3)
```

D

```
def fun(data):
    d = {}
    for ch in data.lower():
      if ch.isalpha():
        if ch in d:
          d[ch] += 1
        else:
          d[ch] = 1
    fr = max(d, key = d.get)
    return str(fr) + ','+ str(d[fr])

print(fun('aabbbccccddddd'))
```

Question 6. Write a Python program which inputs a list of integers and a range. The program should print (a) the numbers which are missing in between the given range in the given list and (b) print those numbers which are outside the given range in the given list.

Example: [2+2=4 marks]

Input:	Range [2:7] (Both numbers are inclusive.)
List:	[7,2,7,2,3,4,5,8,9]
Output1:	Number 6 is missing from the given range 2-7.
Output2:	Numbers 8,9 in the list lie outside range 2-7.

Question 7. Cryptography technique is used to hide the information from the unauthorized persons or machine and it uses the processes of Encryption and Decryption. Encryption is the process of translating plain text into something that appears to be random and meaningless (Cipher). Decryption is the process of converting the Cipher back to plaintext.

Write a Python program which inputs a string and a key where: [2+2 = 4 marks]
Input: One String of Size N. 1<N<100
Key: Number (k) 1<= k <26

The program should **print the output** for Cipher after Encryption and the text obtained after Decryption.

HINT: ASCII Code: A-65 and Z-90

Example:

Plain Text:	THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG
Key:	1
Encryption:	Plain Text + Key
Encrypted Data (Cipher):	UIF RVJDL CSPXO GPY KVNQT PWFS UIF MBAZ EPH
Decryption:	Cipher - Key
Decrypted Text:	THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG

Question 8. Write a Python program for the following class diagram. [4 Marks]