BENNETT UNIVERSITY
TIMES OF INDIA GROUP

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

Department / School ----------

BENNETT UNIVERSITY, GREATER NOIDA

End Term Examination, Fall SEMESTER 2019-20

COURSE CODE: ECSE105L MAX. DURATION: **2 Hours**

COURSE NAME: Computational Thinking and Programming MAX. MARKS: **30**

Note :

- All the questions are compulsory.
- No Separate answer sheets will be given. Answer in the space provided.
- Read each question carefully before answering.
- Please write precisely and neatly. Please make clear diagram wherever required.

MULTIPLE-CHOICE QUESTIONS

[4 × 1= 4 Marks]

Q.1. Which function return current position of file pointer?

a. seek()
b. read()
c. tell()
d. write()

Q.2. Once you open a file with a+ mode, where will be the position of file pointer?

a. End of file
b. Beginning of the file
c. No fix positions
d. Middle of the file

Q.3. Which function used to find number of elements in a tuple?

a. find()
b. len()
c. pop()
d. split()

Q.4. what will be the result of following expression?

14.5%6 or 21

a. 4.5
b. 2.5
c. 21
d. Error

CONCEPTUAL QUESTIONS

[4 × 1= 4 Marks]

Q.5. Write one word/line answer.

a. Which access mode in file handling can create a new file?

b. In which data structure all elements are unique?

c. What is the way to get list elements in ascending order?

d. How you will write a class when Class A is parent and Class B is child class (syntax only).

[3 Marks]

Q.6. We know that every concept in the programming language has a special meaning towards it. Justify why we have two different types of loops (***while*** and ***for***) in python? Illustrate their speciality with an example.

[3 Marks]

Q.7. Assume that you are working for a software industry and your manager wants you to develop a small module to handle two situations for a multiple-choice quiz (with four options) software that is under development.

- Only one option is correct. Don't check further.
- More than one option is correct. Hence, check for each option.

Write an ***if***, ***elif*** and ***else*** code structure to handle each situation separately.

[4 × 1 = 4 Marks]

Q.8. As discussed in classroom, industries often rely on reading a software code by a new developer before moving forward with any modifications/updates. Hence, reading and understand the code is a key task for a successful software product. Your manager in the industry asks to you comprehend/read the portion of the codes and suggest the output.

	Code	Output

a	`def myfun(L):`
	`  L[0][:]=[5,6,7]`
	`  L[1]=20`
	`  print(L)`
	`  return L`
	
	`X=[[1,1,1],[2,2,2],[3,3,3]]`
	`myfun(X[:])`
	`print(X)`	

b	`with open('abc.txt', 'w+') as fp:`
	`  fp.write("Hello this is final exam.\n")`
	`  fp.write("Best wishes for next semester.")`
	`  fp.seek(0)`
	`  print(fp.read(5))`
	`  fp.readline()`
	`  print(fp.read(5))`
	`  for x in fp:`
	`  print(x)`	

c	`class A:`
	`  def __init__(self):`
	`  self.x=2`
	`class B(A):`
	`  def __init__(self):`
	`  self.y=3`
	
	`b=B()`
	`print(b.y)`
	`print(b.x)`	

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

PROGRAMMING QUESTIONS

[3 Marks]

Q.9. In a real-world software development, one module can have multiple functions/methods/operations (all three are the same) are created by the developer that work with each other to achieve the objective of the module.

Your manager asked you to develop a function in Python named "MYFUNCTION" that accepts two lists both of which contain integer elements and returns a sorted list (ascending order) which contains unique common elements from both the lists. If

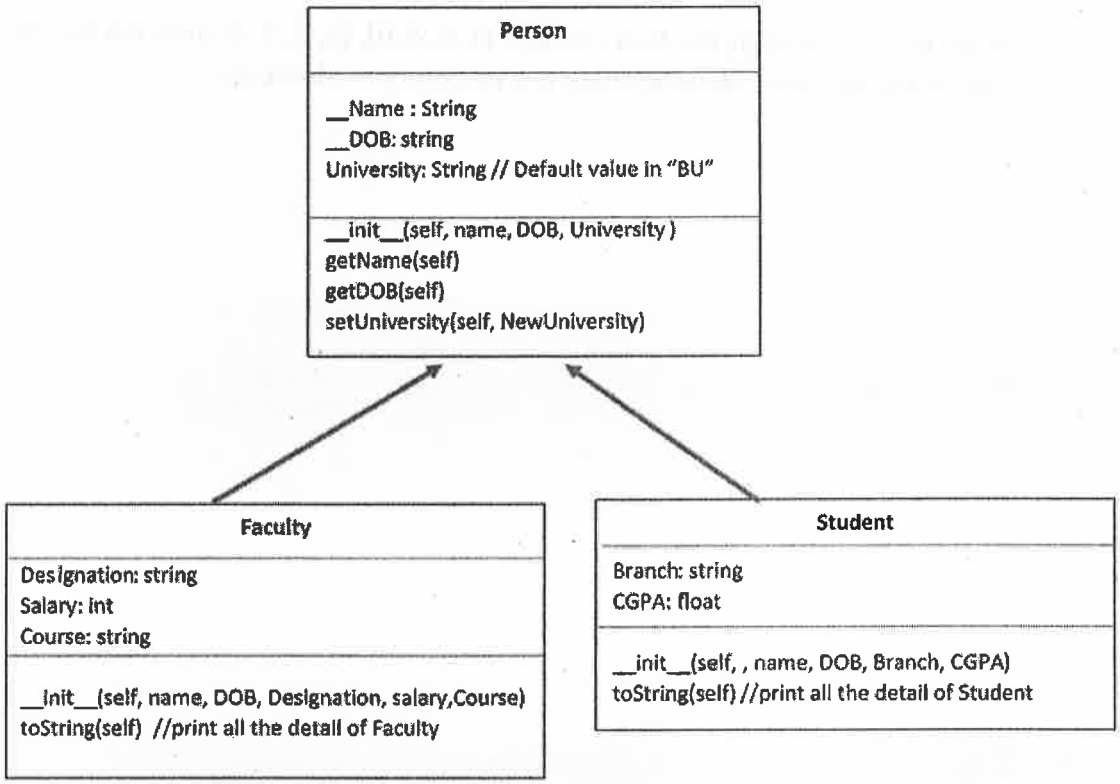
there are no common elements between the two lists, then your function should return the keyword- ***None***

Example: Two list that is accepted by the function are: [2,4,3,6,7,8,3], [2, 8, 8, 3, -7]. Here, elements 2, 3, and 8 are common in both the first lists as well as 3 in the first and 8 in the second list occur twice. Now the function returns a sorted list (ascending order) of unique common elements: [2, 3, 8]

If the lists received by the function are: [1, 6, 4, 0], [3, 2, 3, 2] then the function should return the keyword ***None*** as there are no common elements.

[4 Marks]

Q.10. Before development of the actual software product in the industries, there exists planning of the development. One of the stages requires diagrams to be created. From the diagrams, developers get a snapshot of the entire module and can develop the code. Below is the class diagram of the module from that you have to construct a code skeleton (don't write function implementation details).



[5 Marks]

Q.11. Everyone has heard a song or knows what a song sounds like. A song is typically intended to be sung by the human voice with distinct and fixed pitches and patterns using sound and silence and a variety of forms that often include the repetition of sections.

Develop a python code to answer the following scenarios:

- How many unique words were used compared to the whole lyrics of in the given song?
- What are the top 5 most repetitive words used and how many times they were used throughout the song?

Input: Lyrics file of given song in "song.txt" file
Output: Number of unique words, Top 5 most repetitive word in a dictionary.