Daffodil International University

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Midterm Examination, Fall 2020 @ DIU Blended Learning Center

Course Code: CSE233 (Day), Course Title: Object Oriented Programming II

Level: 2 Term: 3 Section: All

Instructor: All Modality: Open Book Exam

Date: 8 November, 2020 Time: 02:00 pm - 06:00pm

Four hours (4:00) to support online open/case study based assessment Marks: 25

Directions:

- **Students need to go through the CASE STUDY shown in this exam paper.**
- **Analyze and answer specific section based on your own thinking and work.**
- **Do not share as this will be treated as plagiarism by Blended Learning Center.**

Answer All Questions

1. Suppose there are 10 students in a section. And their CGPA is as following in sequence [‘A’, ‘C’, ‘A-’, ‘C+’, ‘A+’, ‘B+’, ‘A’, ‘B-’, ‘C’, ‘A+’]. But student-5 got expelled in the exam. So, his/her result should not be published. Now decide as a programmer what kind of loop you need to use to print all the CGPA’s of the students, except student-5. **[03]**

2. As you can see the following is a python code. Your tasks are to find out and explain the problem statement, output and algorithm/ pseudocode of the following code. **[04]**

```
1  string = 'abcdefghijk'
2  print(string)
3  print(string[5])
4  lst = list(string)
5  lst[5] = 'z'
6  string = ''.join(lst)
7  print(string)
8  print(string[5])
```

3. Suppose you have a list as following: **[04]**
food = [‘sandwich’, ‘apple’, ‘burger’, ‘banana’, ‘pizza’, ‘cherry’, ‘mango’, ‘nuggets’].

   Now develop a python program to pass all the elements of the list as argument to create **two different lists** based on the type of the food, and do it through **two different functions**. You have to also **justify** each of the line of your code with **proper comments.**

4. Create a function that takes the number of wins, draws and losses and calculates the number of points a football team has obtained so far. **[04]**

   Wins get **3** points, draws get **1** point, and losses get **0** points

   Example: football_points(3, 4, 2) ➞ 13

Now write a python program to calculate the same and send minimum **5** different sample sets (choose value as you like) and show all outputs. Also, explain the code of **football_points** function**.**

5. You and your 5 friends are on the way to Saint Martin Island. Everyone give some cash to you and you took the responsibility to keep all records of this tour expenses. Before you all reach Saint Martin, you have bought bus tickets (One way), ship ticket (Both way), six different type of snacks and water. In the next day you paid the hotel bill for one day and gave 3 meals (breakfast, lunch and dinner), bill. Next day gave hotel bill again for two days and got a complimentary breakfast for next 2 days staying. So, in total you paid, bill for only lunch and dinner in next 2 days. In the last day, everyone give you some more cash and you bought return Bus ticket and return home.

a) Now prepare a python program to calculate all expenses individually (snacks, lunch, ticket, etc.) insert, update all expenses and individual cash deposit instantly. Finally give show total item wise expenses individually. And lastly (after showing everything) remove all data.
Note: Assume all variable and values as you like, explain code in every block. **[06]**

b) Support your above solution – what type of programming methods you choose for this solution and why? **[02]**

c) *"There is no index attached to any element in a python set"* – what do you understand from this quote? Explain with necessary examples. **[02]**

Thank You!