

**University of Asia Pacific**  
**Department of Computer Science and Engineering**  
**Program: B.Sc. in CSE**

**Mid-Semester Examination**

**Fall-2023**

**3<sup>rd</sup> Year 1<sup>st</sup> Semester**

**Course Code: CSE 309**

**Course Title: Object Oriented Programming II: Credit: 3.0**  
**Visual and Web Design**

**Time: 1.00 Hour.**

**Full Mark: 20**

**There are Three Questions. Answer all of them. Part marks are shown in the margins.**

1. a. Write a python function that takes a number of positional arguments (int) and returns the average and the summation of those numbers. You do not have to take user input. Here is an example of how you will call your function. [4] [CLO1]

Function call	Function returns
fun(1,2,3,4,5)	3, 15
fun(1,2)	1.5, 3

- b. Analyze the provided Python code to determine the final output after its execution. Subsequently, justify your conclusion. [4] [CLO2]

```
addition = 0
my_list = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
output = my_list[-2:-9:-2]
print(output)
for i in output:
    if (i/2 == 0):
        addition += i

print(addition)
```

2. Write corresponding HTML scripts to generate the following table.

[4]

[CLO3]

Serial No.	Product Name	Product Price
1.	Rice	150
2.	Meat	350
Total		500

3. Imagine you're creating a system to handle various vehicles for a transportation company. Each vehicle has basic details like its brand, model, and manufacturing year. Additionally, different vehicles have specific characteristics, such as mileage for cars, motorcycles, and bicycles. You've decided to build this system using the principles of object-oriented programming, specifically through inheritance.

[2+4+2=8]

[CLO3]

- a. Main Class: ( at least have 3 attributes )

Create a class named Vehicle to represent the common features shared by all vehicles. This class should include attributes like brand, model, and year of manufacture.

Also, define a method named describe() to provide a description of the vehicle.

- b. Subclass: ( Must extend Main class and at least have 3 extra attributes )

Develop a subclass called Car, which inherits from the Vehicle class. In addition to the common attributes, the Car class should have an extra attribute to store its mileage.

Implement a method named calculate\_mileage() to return the car's mileage.

- c. Provide an example illustrating how to create a Car object and utilize its methods.