**THE SUPERIOR UNIVERSITY LAHORE**

**Final - Term Exam**

**Semester: 1st Session: Spring 2023**

**Faculty of Computer Science and Information Technology QCH: Mr. Ahmad Amin**

**Subject: object oriented programing Total Marks: 40**

**Name: Roll No: Date: Time Allowed: 90 Min.**

**Instructions:**

**Read the question carefully before writing the answer.**

**WRITE YOUR ANSWERS ON THE PROVIDED SPACE, NO ANSWER/EXTRA SHEET IS USED IN THIS PAPER.**

**Calculator is NOT allowed.**

**Question # CLO # Domain and BT Level Total Marks**

**1 CLO1 C2**

**2 CLO2 C4**

**Question# 1: (20 Marks)**

Write a c++ program that creates a program for a new ice cream vendor called Lecream. The management of LeCream has decided that they are going to sell their ice cream in 7 different flavors namely chocolate , vanilla ,Strawberry , mango tutti fruit ,almond crunch and coffee .

Carefully design the program by observing the following rules .

Lecream is charging Rs 100 for two scoops and Rs 150 for three scoops hence you will need a function to determine the number of scoops and based on that the price . if a user enters more then three scoops your program should display invalid input and it should exit .

LeCream allows its customers to purchase a vanilla wafer with their ice cream . if the customer wants to purchase the wafer he will have to pay an additional Rs 10 this amount should be added to the total amount payable by the user

If the customer asks for chocolate flavor then he will have to pay an additional amount i.e Rs 120 for two scoops and Rs 180 for three scopes Design a function that will be called if the customer chooses flavored ice cream

This program should show a menu that asks the customer for his requirement and then displays the final paypal amount with full details about the flavor, number of scoops and wafer

**Question# 2: (10 Marks)**

Design a game where different characters (e.g., Player, Enemy) can interact with each other. Implement a base class Character with a virtual method attack(). Derive classes like Player and Enemy from Character, each having its own attack behavior. Use polymorphism to make different characters attack each other.