**Philadelphia University**

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**Faculty of Information Technology**

**Department of Software Engineering**

**Examination Paper**

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**Object-Oriented Programming 721220 First Exam 2nd semester** **2012-2013**

**Date: 4th April 2013**  **Section: 1**  **Time**: **50 Minutes**

**Information for Candidates**

1. *This examination paper contains 3 questions. The total is 20.*
2. *The marks for parts of questions are shown in round brackets.*

**I. Basic Notions**

*Objectives: The aim of the question is to evaluate your knowledge and skills concerning with the basic concepts of* ***OOP****.*

**Question 1: [4 Marks, 1 Mark each]**

Fill in the blank with the correct answer:

1. To call the constructor of any class; use the keyword new
2. A template for similar objects is called class

3- The following constructor has an error, which is Void

 *Public* *void Student( ) { st\_ID = 1234; }*

1. The following diagram is created using a language called UM:



### II. Familiar Problems Solving

### *Objectives: The aim of the question is to evaluate your basic knowledge of the key aspects of the lectures material and your ability to solve familiar problems.*

**Question 2:** **[8 Marks]**

Write a simple class called *student* that represents a university student. (1 mark)

1. This class has two instance variables representing student name and student ID. (1 mark)
2. Write a proper constructor for the class (2 marks)
3. Create two public properties:
1- that sets a name to the name field*.* (1 marks ) *2-* that sets a value to the Id field. (1 marks )
4. Create a method called *calc\_avg( )*, that takes five arguments and return their average. (2 marks)

using System;

 public class Student

 {

 private string name;

 private double studentID;

 public string name

 {

 set { name = value; }

 }

 public string StID

 {

 set { studentID = value; }

 }

 public Student(string n)

 {

 Sal=50;

 name=n;

 }

 public double calc\_avg(double1 m1, double m2, double m3, double m4, double m5)

 {

 return (m1+m2+m3+m4+m5)/5;

 }

**Question 3: [8 Marks]**

Study the following class, then answer the questions below:

using System;

 public class Employee

 {

 private string name;

 private double salary;

 public double Sal

 {

 get { return salary; }

 set { if (value >= 0) salary = value; }

 }

 public Employee( string n)

 {

 Sal=50;

 name=n;

 }

 }

 public class TestEmployee

 {

 public static void Main()

 {

 ……………………………

emp.Sal= -700;

emp.name = "Enas";

Console.WriteLine("Salary = {0}", emp.Sal);

 }
 }

1. Create an object of class Employee called *emp* (2 marks).

 Employee emp= new Employee("Ali");

1. The Main method conatins an error. Try to locate that error and correct it. (2 marks)

emp.name ="enas";

 name is a private attribute, we can correct this error by writing the attribute properties (get;set) .

1. What is the output of the last statement? (2 marks)

Salary= 50

1. Extend the class by adding a method called *tax( ).*

This method asks users to input the percentage of the tax. It then calcucates net salary after deducting the tax (2 marks)

public double tax( )

{

double d= Convert.ToDecimal(Console.ReadLine( ) );

double net\_sal = Sal - Sal\*d;

return net\_sal

}

Good Luck ☺