**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. The operator *new* calls the class constructor.
2. A blueprint for a software object is called a class.

3- The following constructor has an error, which is : it has a returned type

 *Public* *int Employee( ) { empID = 100; }*

1. The following diagram is called a class diagram.



### 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 *Counter* that represents a counter that counts integer values starting from Zero (1 mark)

1. This class has one instance variable representing the value of the counter. (1 mark)
2. Write a proper constructor for the class (2 marks)
3. Create two Methods:
*increment( )* that adds one to the counter value*.* (2 marks ) *getValue( )* that returns the current counter value. (2 marks )

public class counter

 {

 private int i;

 public counter()

 {

 i = 0;

 }

 public void increment()

 {

 i++;

 }

 public int getValue()

 {

 return i;

 }

}

**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= -400;

emp.name = "Enas";

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

 }
 }

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

 Employee emp= new Employee("abc");

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 *Bonus( ).*

This method asks users to input the number of bonus hours. It then calcucates the bonus value where the employee will be paid 10$ per hour (2 marks)

 public int Bonus()

 {

 Console.WriteLine("please enter the number of bonus hours");

 int a = Convert.ToInt16(Console.ReadLine());

 return a \* 10;

 }

Good Luck ☺