COMSATS University Islamabad, Abbottabad Campus
Department of Computer Science
Midterm Examination (SP- 2024)

Class: BSE – 3A
Subject: Object Oriented Programming.
Total Time Allowed: 90 minutes
Name: _____

Date: 18 May 2024, 12:45, A213
Instructor: Dr. Waqas Jadoon
Max Marks: 50
Registration # _____

Section A: CLO1-C2: (Understanding) Marks:30

Question#1: Briefly answer the following:

I. Describe the concept of class and objects in Object Oriented Programming.

II. Explain a java program structure with an example, how you will compile and execute the program using JDK from command prompt.

III. Given a Circle class with attribute radius as following:

```
public class Circle{
private double radius;
}
```

Write a constructor to initialize Circle object by passing radius value as argument at the time of object creation.
Write proper setter and getter methods to access radius object.
Create a circle object and access its radius value to display area of circle in main method.

IV. Use a one-dimensional integer array to store 10 integer values into an array at the time of array declaration, display these values and calculate and display total of all array elements

V. Write the output of following programs assuming there is no syntax error in the code. (10-marks)

(a)

```
public class Test {
public static void main(String[]
arg) {
        int i=0;
        while(i<=10){
           i++;
        if(i==3 ||i==6)
          continue;
  System.out.printf("%d \t",i);
   if(i%5==0)
   System.out.println("");
   }//end while
  }//end main
```

(b)

```
public class StaticMethod {
    private int a;
    private static int b;

    //default constructor
    public StaticMethod(){
      for(int i=1;i<=5;i++)
          ++b;
      }

    //one argument constructor
    public StaticMethod(int arg){
```

CamScanner

Section B: CLO2-C3: (Creating) Marks:20 Marks

Question#2: Design an Object-Oriented model based on the following Scenario. (15 Marks)

In a university management system, there is a need to represent universities as objects in Java. Each university has multiple departments, and there's a requirement to store their names. Additionally, each university should have its own name. To fulfill this requirement, you need to design a University class with appropriate attributes, constructors, and methods. You must include **public void addDepartment(String departmentName)** functionality into your class as well.
In a UniversityTest class, you must create Object of university class and display university name and its department name.

Question#3: Create a Student Class as following. (5 Marks)

The Student class contains an attribute called "marks" to store the test scores of multiple students. These test scores are represented using a two-dimensional integer array.
Write a constructor for the Student class that takes the test marks of multiple students as a parameter during the creation of a Student object.
Then simply create an object of the Student class and provide the test marks of multiple students as an argument.

Good Luck



CamScanner