# COMSATS University Islamabad, Abbottabad Campus

**Department of Computer Science**   Lab-Midterm Examination (Fall 2022)

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| Class: BSE – 3B | Date: 22/11/2022 |
| Subject: Object Oriented Programming. | Instructor: Dr. Waqas Jadoon |
| Total Time Allowed:75 minutes) | Max Marks: 20 |
| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Registration # \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Important Instructions: After completing your task, you need to upload the program code and output into a single world file/pdf file containing code and output screen shot in Netbeans.**

**The screenshot of the code and output should be clear and readable otherwise you will get penalized**

**Any other file format is not acceptable:**

**Copying/cheating code is serious offence and will be severely penalized without any compromise, so make sure nobody even copies your code.**

**[NOTE: Do not create any unnecessary functions and task, otherwise you will be penalized].**

**Only perform the given task using program structures which we have studied so far.**

**Time: 1 hour and 30 minutes. uploading time on cuonline 10-15 minutes)**

**Questions:** Create a Student and Department classes having a composition relationship, A Department can have multiple number of students. Student class have following attributes, **name, reg# and CGPA.** The department class should have **dept-name, and students (use an array/ArrayList to store multiple students)**. (P1)

Each class should contain constructor for variable initialization and toString( ) function for displaying object data. (P2)

Create a main class University to create an objects of Department class and display information, department object must contains two students. (P3,P4)

You can write any extra variable or function to get the desired output…

**Class Diagram:**

Name: Ali

Reg# 1234

CGPA: 3.2

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| --- |
| **Student** |
| -name:String  -reg#:String  -CGPA:double |
| +Student(name:String,reg#:String,CGPA:double  +getMarks( ):int[ ]  +toString( ):String |

|  |
| --- |
| **Department** |
| -deptname:String  -students: Student[ ] |
| +Department(deptname:String,students:Student[ ],program: String  +getStudents( ):Student[ ]  +toString( ):String |

**The output should be:**

Department Name: Computer Science

Total Enrolled Students: 2

[Grab your reader’s attention with a great quote from the document or use this space to emphasize a key point. To place this text box anywhere on the page, just drag it.]

Student Details:

Student#1:

Name: waleed

Reg# 2212

CGPA: 3.2

Student#2

Name: Ahmed

Reg# 2212

CGPA: 2.5