# COMSATS University Islamabad, Abbottabad Campus Department of Computer Science

**LAB #6**

# Object Oriented Programming Class: BSE- 3 A & B

Q1. Write a Java program that has a class Car having attributes like; CarModel, CarName, CarPrice and CarOwner. The program should include methods to assign user defined values to the above mentioned attributes and a display method to show the values. Your program should include at least three Car objects and show which car has the maximum selling price.

Q2. Write a program that contains variables to hold employee data like; employeeCode, employeeName and date Of Joining. Write a method that assigns the user defined values to these variables. Write another method that asks the user to enter current date and then checks if the employee tenure is more than three years or not. Call the methods in main. Now write a runner class that declares two employee objects and check their tenure periods.

Q3. A Student is an object in a university management System. Analyze the concept and identify the data members that a Student class should have. Also analyze the behavior of student in a university management System and identify the methods that should be included in Student class.

Q4. Write a class Account having attributes emp\_id, emp\_name, amount and rate of interest. Apply all method which have been studies in the class and show the results.

You are to design a Java program for creating and managing bank accounts. The balance of an account is represented in cents as an integer. There are 100 cents to a dollar.

1. Give the definition of an Account class that contains: (1) the integer data item balance, (2) a default constructor that initializes the balance to 0, and (3) a method ***get\_balance()*** that returns the current balance.
2. Give the implementation of a method ***deposit()*** that takes an integer and adds it to the balance.
3. Give the implementation of a method ***withdraw()*** that takes an integer and removes it from the balance *if there is sufficient* money *in the account*.
4. Give the implementation of a method ***display\_balance()*** that displays the balance in the form dollars to cents. For example, the balance 10000 would be displayed as $100.00.
5. (e)

Q5. Each animal in the zoo has a name (a string) and a feeding time (an integer). Give an implementation of a class Animal that contains: (1) these public data items; (2) a constructor that takes a name, and sets the animal's name to it and its feeding time; (3) a method display that prints the name and feeding time of the animal.

Q6. Create class point with following instance variable and methods. Instance variable: private int x,y

**Constructors** : public Point(), Point(int x, int y) &

**Methods** : public void setX(int x), setY(int y), setXY(int x, int y) and also display the values of each method you set in above methods after creation of two objects at least.

Q7. Write a constructor in the Car class given below that initializes the *brand* class field with the string “Ford”. Call the getBrand() method in the main method of the Sample class and store the value of the brand in a variable, and print the value.

Q8. Write a program in JAVA to demonstrate the method and constructor overloading

Q9. Write a program in JAVA to create a class Bird also declares the different parameterized constructor to display the name of Birds.

Q10. Write a program to print the area of two rectangles having sides (4,5) and (5,8) respectively by creating a class named 'Rectangle' with a method named 'Area' which returns the area and length and breadth passed as parameters to its constructor.

Q11. Create a class named 'PrintNumber' to print various numbers of different datatypes by creating different methods with the same name 'printn' having a parameter for each datatype.

Q12. Create a class to print an integer and a character with two methods having the same name but different sequence of the integer and the character parameters.

For example, if the parameters of the first method are of the form (int n, char c), then that of the second method will be of the form (char c, int n).

Q13. Create a class to print the area of a square and a rectangle. The class has two methods with the same name but different number of parameters. The method for printing area of rectangle has two parameters which are length and breadth respectively while the other method for printing area of square has one parameter which is side of square.

Q14. Create a class 'Student' with three data members which are name, age and address. The constructor of the class assigns default values name as "unknown", age as '0' and address as "not available". It has two members with the same name 'setInfo'. First method has two parameters for name and age and assigns the same whereas the second method takes has three parameters which are assigned to name, age and address respectively. Print the name, age and address of 10 students.

Hint - Use array of objects