COMSATS University Islamabad, Abbottabad Campus

**Department of Computer Science**

**LAB #5**

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

Q1. Write a class Book with three data members BookId, Pages and Price. It also contains the following member function:

* The get() method is used to input values
* The show() method is used to display values
* The set() method is used to set the values of data members using parameters
* The getPrice() method is used to return the value of price and show that record which have maximum book price.

Q2. Create a class building that has the public member floors, area, and occupants and a method areaperperson()respectively that display the area per person for building. In the main() method create two instance of building class called house and office and display the area per person by division of area/occupants**.**

Q3. Create a class rectangle. The class has attributes length and width each of which defaults to 1. It has member function that calculates the perimeter and the area of the rectangle. It has set() and get() functions for both length and width. The set() function should verify that length and width are each floating point numbers larger than 0.0 and less than 20.0.

Q4. Write a program to create a class Student with data ‘name, city and age’ along with two methods getData() & printData() to get the value through argument and display the data. Create two objects s1, s2 to declare and access the values.

Q5. Create class Number with only one public instance variable as an integer primitive type. To include the following methods and show the results:

isZero( ), isPositive(), isNegative( ), isOdd( ), isEven(

),isPrime(),getFactorial(), getSqrt(), getSqr(), sumDigits(), getReverse().

Q6. Write a class Result that contains roll no, name and marks of three subjects. The marks are stored in an array of integers. The class also contains the following member functions.

* The input() method is used to input values
* The show() method is used to display values
* The total() returns the total marks a student
* The avg() method returns the average marks of a student

Q7. Write a program that would print the information (name, year of joining, address) of three employees by creating a class named 'Employee'. The output should be as follows:

**Name Year of joining Address**

|  |  |  |
| --- | --- | --- |
| Umar | 2021 | Abbottabad |
| Adil | 2019 | D. I Khan |
| Bilal | 2017 | Lahore |

Q8. Write a program to print the area of a rectangle by creating a class named 'Area' having two methods. First method named as 'setDim' takes length and breadth of rectangle as parameters and the second method named as 'getArea' returns the area of the rectangle. Length and breadth of rectangle are entered through keyboard.

Q9. Five Bikers Compete in a race such that they drive at a constant speed which may or may not be the same as the other. To qualify the race, the speed of a racer must be more than the average speed of all 5 racers. Take as input the speed of each racer and print back the speed of qualifying racers