FOUNDATION UNIVERSITY
Rawalpindi Campus

Final Examination – Spring 2021

Program: BCSE	Semester: 2
Course Title: CSC103L – Object Oriented Programming Lab	Sections: A
Instructor Name: Noushin Mazhar	Max Marks: 50
Time Allowed: 3 hours	Date: 25 June 2021

Name: Reg. No:

Q1. Briefly comment on the following statements from JAVA point of view. (4 marks)

a) Abstract class cannot have fully implemented methods but can have abstract methods.

b) If there is a try block in a program then there must be an exception. block and also a finally block in the same program.

Q2. Give output

a) Exceptional Handling (2 marks)

```
public class ExceptionTesting {
   public static void main(String[] args) {

          try{
                int n=5/0; //will throw ArithmeticException
          }catch(ArithmeticException e){
                System.out.println("ArithmeticException handled in catch block");
          }
          finally{
                System.out.println("finally block executed");
          }
          System.out.println("code after try-catch-finally block");
   }
}
```

b) Java Interface: Which of the following classes fail to compile. (2 marks)

```
interface I1
{
    void m1();
}
interface I2 extends I1
{
    void m2();
}
abstract class A implements I1, I2
{
    public void m2() {}

    public void m() {}

}

abstract class B implements I2
{}
class C extends A implements I1, I2
{}
class D extends A
{}
```

Q3. Abstract class and interface: (17 marks)

1. Create an interface **Interest** and declared the method rateOfInterest( ). (2)
2. This interface is implemented by three classes 'UBL', 'ABL' and 'Askari'. These classes will calculate their own using rateOfInterest( ). (5)
3. Create an **abstract class 'Bank'** having data members interest_rate, no_of_years with an abstract method '**getBalance( )**'. $300, $450 and $600 are deposited in banks UBL, ABL and Askari respectively. (3)
4. Define attributes, constructors, getter , setter methods where required accordingly. (2)
5. 'UBL', 'ABL' and 'Askari' are subclasses of class 'Bank', each having a method named 'getBalance'. (2)
6. Call this method by creating an object of each of the three classes in main method and display the interest. (1)
7. Also define **custom exception(user defined)** to handle InsufficientFundsException. (2)

Hint: Formulae to calculate rate of interest is `(rate*balance*no_of_years)/100`

Q4. OOP project (25 marks)