

# North South University

Department of ECE

Final Examination Summer 2020 (Undergraduate Program)

Course: Programming Language II (CSE215) Total Marks: 40 Time: 1 hour 20 minutes

**(Answer any four questions including question no. 4)**

1. a. Consider the following line segment of a Java program. What does it mean using throws keyword in the line? [3]

```
static void amount(int a) throws ArithmeticException
{
    .....
    .....
}
```

- b. What is the output of the following Java code? Explain. [2]

```
class Rahim implements Runnable
{
    int a, b;
    public void run()
    {
        for(int p = 0; p < 500; p++)
            synchronized(this)
            { a = 20; b = 20; }
        System.out.println(a);
        System.out.println(b);
    }
    public static void main(String args[])
    {
        Rahim run = new Rahim();
        Thread j1 = new Thread(run);
        Thread j2 = new Thread(run);
        j1.start();
        j2.start();
    }
}
```

- c. Write a Java program to find the area and perimeter of rectangle ,square and triangle using interface and method overloading ? [5]

2. a. What will be output of the following Java code ? [3]

```
class Testtry {
    public static void main (String [ ] args ) {
        int a = 0;
        String name[] = {" Rahim ", "Karim", "Shuvo "};
        while ( a < 4) {
            try {
                System.out.println (name [a] );
                a++;
            }catch (Exception e ) {
                System.out.println ("Nothing");
            }
        }
    }
}
```

```

    }
    finally {
        System.out.println (" Must Execute");
        if (a < 3);
        else {System.out.println("Wrong");break;}
    }
}
}
}

```

- b. What will be the output of the following code segment? Explain.

[2]

```

public class X
{
    public static void main(String [] args)
    {
        try
        {
            badMethod();
            System.out.print("A");
        }
        catch (RuntimeException ex)
        {
            System.out.print("B");
        }
        catch (Exception ex1)
        {
            System.out.print("C");
        }
        finally
        {
            System.out.print("D");
        }
        System.out.print("E");
    }
    public static void badMethod()
    {
        throw new RuntimeException();
    }
}

```

- c. Write a Java program to create your own Exception to check whether a number is a) Prime or not b) Even or odd. [5]

3. a. Fill in the blanks in the code below so that, when the code runs, its output is: [3]

- 1) got null pointer
- 2) got illegal array store
- 3) got illegal class cast

```

public class TestExceptions {
    public static void main (String [ ] args) {
        _____ ;
        try
            _____ ;
    }
}

```

```

    } catch (NullPointerException e) {
        System.out.println ("got null pointer");
    }
    try {
        _____ ;
    } catch (ArrayStoreException e) {
        System.out.println ("got illegal array store");
    }
}

```

- b. What will be the output of the program?

[2]

```

class s1 extends Thread
{
    public void run()
    {
        for(int i = 0; i < 3; i++)
        {
            System.out.println("A");
            System.out.println("B");
        }
    }
}
class Test120 extends Thread
{
    public void run()
    {
        for(int i = 0; i < 3; i++)
        {
            System.out.println("C");
            System.out.println("D");
        }
    }
    public static void main(String args[])
    {
        s1 t1 = new s1();
        Test120 t2 = new Test120();
        t1.start();
        t2.start();
    }
}

```

- c. Write a Java program to implement two threads such that one thread prints all the numbers that are divisible by 3 or 5 but not both from 1 to 100 and other thread prints all the numbers that are divisible by both 3 and 5 from 1 to 100. (use Thread class ). Note : Each thread has a delay of 200 millisecond after printing one number

[5]

4. a. In the following code, the classes *Ict* and *Cse* are in different packages. If the question marks in (a) are replaced by blanks, can class Cse be compiled? If the question marks are replaced by private, can class Cse be compiled? If the question marks are replaced by protected, can class Cse be compiled?

[3]

```
(a)
package d1;
public class Ict {
    ?    int c;

    ?    void r() {
        ...
    }
}
```

```
(b)
package d2;

public class Cse extends Ict {
    public void m1(String[] args) {
        System.out.println(c);
        r();
    }
}
```

- b. Why is the below code showing compilation error? [2]

```
class One
{
    void methodOne()
    {
        public class Two
        {

        }
    }
}
```

- c. Write a Java a program with a main thread and two user threads, **thrd1** and **thrd2**. [5]

- i) Have **thrd1** use a Scanner to read integers from a String. There should be an even number of integers.
- ii) Thread **thrd1** first reads two integers and then initializes to integer fields, x and y that are shared with **thrd2**.

**Thread thrd2 adds each new pair of integers and prints them out.**

5. a. Write a Java program to perform following using Multithreading a) Addition of two nos. b) Subtraction of two nos. c) Multiplication of two nos. d) Division of two nos. e) Modulus of two nos. [6]
- b. Define a class “*Student*” having private members – *id*, *department*, *quizmarks*. Define default and parameterized constructors. Create a subclass called “*Firstyearstudent*” with private member *finalmarks*. Define methods accept and display in both the classes. Create n objects of the Student class and display the details of the Student having the total marks (quizmarks.+ finalmarks.) [4]