Comilla University
Department of Computer Science and Engineering
2nd Year 2nd Semester Final Examination-2019
Session: 2017 - 2018
Course Name (Course Code): Java Technologies (CSE 2208)

Time Allowed: 2 Hours

Full Marks :30

[Answer **any four** (4) from the following questions. Figures to the right indicate full marks. Answer each part of the question consecutively. Writing anything in the question is strictly prohibited.]

1. a. Differentiate between early binding and late binding using appropriate examples.   2.5

    b. Consider three fruits "Mango", "Orange" and "Apple" shares some common attributes from "Fruit" class. Write necessary Java code to illustrate the scenario with class declaration and object creation process.   3.5

    c. What is the output of the given Java code snippet?   1.5

```java
class TestApp {
    int i[] = { 0 };
    public static void main(String args[]) {
        int i[] = { 1 };
        alter(i);
        System.out.println(i[0]);
    }
    public static void alter(int i[]) {
        int j[] = { 2 };
        i = j;
    }
}
```

2. a. "Java is called platform independent but machine dependent language" – Justify the statement in contrast with C++.   3.5

    b. Explain the use of "*this*", "*super*" and "*final*" keywords in Java with minimal code examples.   2.5

    c. What will be the output of given code snippet?   1.5

```java
public class SimpleTest {
    public static void main(String args[]) {
        try {
            args[0] = "0";
            return;
        } catch (Exception e) {
            System.out.print("Exception");
        } finally {
            System.out.print("Final");
        }
    }
}
```

1

3. a. Write down the output of the following code:

```
class A {
    void show() {
    System.out.println("This is Class A.");
    }
}
class B extends A {
    void show(){
    System.out.println("This is Class B.");
    }
}
class Override {
    public static void main(String args[ ]) {
        B obj = new B();
    obj.show();
    }
}
```

2

  b. Write short note on: Polymorphism and Servlet.

3

  c. Can java support multiple inheritances? If yes, then explain with example.

2.5

4. a. Write down the output of the following code:

3

```
class Exp{
    public static void main (String args[ ]) {
    int p[]= {50,120}, q=5, s;
        try{
            s=p[2]/p[1];
        }
    catch(ArithmeticException e) {
    System.out.println("value of s is undetermined ");
    System.out.println("\t(divition by zero)");
        }
    catch (ArrayStoreException e) {
    System.out.println("Invalid data type ");
        }
        catch (ArrayIndexOutOfBoundsException e) {
    System.out.println("Array index error ");
        }
        s=p[1]/p[0];
    System.out.println("Now s is = " +s);
        }
    }
}
```

  b. Differentiate between compile time and run time polymorphism.

2.5

  c. Write down the purpose of each of the following methods:

2

- i)   String toUpperCase()
- ii)   intindexOf(intch)

5. a. What is I/O streams in Java? How Byte streams and Character streams differ from each other? Illustrate with an example.   3

b. When to use Runnable interface or Thread class for implementing multithreaded programs in Java?   2.5

c. What will be the output of given code snippet?   2

```java
public class Test implements Runnable{
    public void run() {
System.out.println("CSE");
    }
    public static void main(String args[]) throws
InterruptedException{
        Thread th = new Thread(new Test()));
th.start();
th.start();
System.out.println(th.getState());
    }
}
```

6. a. Differentiate between Java Applet and Servlet with their functionalities, working principles, advantages and disadvantages.   3

b. From the given sample class diagram, generate necessary Java code to write a program for Customer Ordering system.   3

Sample Class Diagram
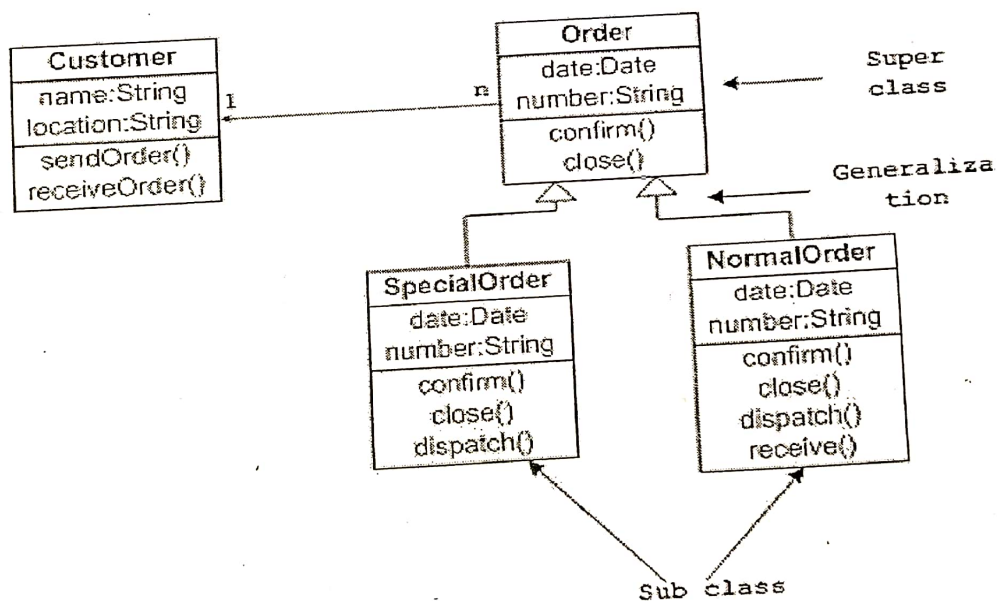
c. What are the benefits of Java Collections framework over custom API development?   1.5