1. (2 pts) Error, RuntimeException, and their subclasses are called __________ exceptions, and Throwable and all other subclasses of Throwable are called __________ exceptions.

2. (2 pts) What is Java's catch or declare rule?

3. (2 pts) Java supports the __________ model of exception handling. Given this, will Joanie or Chachi be printed when the following code is executed? Explain.

```java
public class Question3 {
    public static void main(String[] args) {
        int counter;
        for (counter=0;counter<100;counter++)
            if (counter % 3 == 0 && counter % 5 == 0 && counter % 2 == 0)
                throw new RuntimeException("Multiple of 30");
        if (counter < 30)
            System.out.println("Joanie");
        else
            System.out.println("Chachi");
    }
}
```

4. (2 pts) Point out the two errors in the following code given that IOException is not a subclass of RuntimeException nor of Error. If all of the catch blocks were removed and the program executed, would the message at the top of the stack trace be Hawaii or 50? Explain.

```java
public class Question4 {
    public static void main(String[] args) {
        try {
            int num = Integer.parseInt(args[0]);
            throw new NullPointerException("Hawaii");
        } catch (Exception e) {
            System.out.println("Exception");
        } catch (NumberFormatException nfe) {
            System.out.println("NumberFormatException");
        } catch (java.io.IOException ie) {
            System.out.println("IOException");
        } finally {
            throw new NullPointerException("50");
        }
    }
}
```

5. (2 pts) The char data type is the only __________ numeric type since it can’t hold a negative number, and data that is stored in external files is called __________ since it is normally not destroyed when a program ends.