(a) Which Java class is the parent class of all Exceptions?
Ans: java.lang.Exception

(b) What is the difference between Exceptions and Errors?
Ans: We can handle Exceptions.
We can't handle Error.

(c) What is the purpose of Exceptions? Give an example of what they're used for.
Ans: By using try and catch to handle exception.
Trying to divide by 0. File not found.

2.Draw the basic exception-class hierarchy, with Throwable at the top. Include at least two subclasses of Error, Exception, and RuntimeException.
Ans: Throwable
1.Error
*OutOfMemoryError
*InternalError
2. Exception
*IOException
*RuntimeException
ArithmeticException
ArrayStoreException
NullPointerException

3. In the following statements, suppose S1 throws an Exception, so S2 is executed. State what happens in two cases: (1) S2 throws an exception, (2) S2 does not throw an exception.
Ans: try { S1 }
catch (Exception e) { S2 }
S3
If S2 throws an exception (and it is not within a second try-block), the exception is thrown out to the place of call. If S2 doesn't throw an exception, the try-statement execution ends —and S3 is executed.

4.Consider class C given below. Function Integer.parseInt throws a NumberFormatException if its argument does not contain an integer. Below class C, rewrite the class so that if Integer.parseInt throws an exception, the number 1 is used. Note that Integer.parseInt is called in two places so you may need two try-statements.

Don’t be concerned with how one reads from the keyboard, pausing until something is typed.

```
  public class C {
      /** Print the sum of two integers read from the keyboard */
      public static void main(String[] args) {
          System.out.println("Enter a number: ");
          String s;
          Read a line from the keyboard and store it in s;
          int a= Integer.parseInt(s);
          System.out.println("Enter another number: ");
          Read a line from the keyboard and store it in s;
          int b= Integer.parseInt(s);
          System.out.println("Product: " + a*b);
      }
}
```

Ans:

```
public class C {
/** Print the sum of two integers read from the keyboard */
public static void main(String[] args) {
    System.out.println("Enter a number: ");
    String s;
    Read a line from the keyboard and store it in s;
    int a= 1;
    try {a= Integer.parseInt(s);}
    catch (NumberFormatException nfe) {}
    System.out.println("Enter another number: ");
    Read a line from the keyboard and store it in s;
    int b= 1;
    try {b= Integer.parseInt(s);}
    catch (NumberFormatException nfe) {}
    System.out.println("Product: " + a*b);
}
}
```