Critical Thinking(page 300): questions #1 - #5, and # 7-8.

#1 Can data in memory be called a file? Explain.

No, data in memory cannot be called a file. Because a file is a collection of related data stored on a persistent (i.e. lasting) medium like a hard disk or a CD. They often store data used by an application, and are also used to store the data generated by an application. In either case, a file is separate from the application accessing it and can be read from and written by more than one application. Most applications require access to one or more files on disk.

#2 Write the IMPORT statement required to access the File Class in an application.

(import statement is: import java.io.File;)
Is what's in the brackets the correct import statement?

Information to answer the question.

#3 Identify the error in the following statement: File textFile = new File("c:\inventory.txt");

```
File textFile = new File("c:\inventory.txt");
```

Path:	/Chapter11/src/Mastery/StudentNames.txt
Location:	C:\Users\26031001\git\CS30Fall2023\Chapter11\src\Mastery\StudentNames.txt

```
//create the file
File textFile = new File("C:\\Users\\26031001\\git\\CS30Fall2023\\Chapter11\\src\\Mastery\\StudentNames.txt");
```

The error is an: Invalid escape sequence (valid ones are \b \t \n \f \r \" \' \\ ), Also the first letter of the file name needs to be uppercase instead of lowercase and the full location of the file is missing.

#4
a) Which statement is used to write an exception handler?

Try and catch statements.

b) Write an exception handler to handle an IOException if a specified file name cannot be used to create a file. The exception handler should display appropriate messages to the user.

```
import java.io.File;
import java.io.FileNotFoundException;
import java.io.IOException;
import java.util.Scanner;

public class TryAndCatchStatement
{

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

```java
Scanner input = new Scanner(System.in);
String fileName;
File textFile;
File newFile;

//Obtain the file name from the user
System.out.println("Enter the file name: ");
fileName = input.nextLine();

//create the file
textFile = new File(fileName);

//Example of what the file could look like
/*textFile = new File("C:\\Users\\26031001\\git\\CS30Fall2023\\Chapter11\\src\\Newdefaultpackage\\MyFile.txt");*/

//Check to see if the file exists, create the file if it does not , and write line to the new file
try
{


        if(textFile.exists())
        {
            System.out.println("MyFile.txt file exists! ");
        }
        else
        {
            try
            {
                    textFile.createNewFile();
                    System.out.println("MyFile.txt file has been created! ");
            }
            catch(IOException e)
            {

                    System.out.println("File could not be created. ");
                    System.err.print("IOException: " + e.getMessage());
            }

            System.out.println("File Does Not Exists! ");
        }

}catch(FileNotFoundException e)
{
        System.out.println("File does not exist. ");
        System.err.println("FileNotFoundException: "+ e.getMessage());
}
catch (IOException e)
{
        System.out.println("File could not be created. ");
        System.err.println("IOException: "+ e.getMessage());
}


}
```

}

#5
 a) What is the name of the stream for displaying error messages?

The err stream!

b) Where are these messages displayed?

On the screen?

#7 What two classes are used together to write data to a file?

FileWriter out; and BufferedWriter writeFile;

#8 Write a statement to convert account balances that have been read from a text file to a
DOUBLE value and add them to totalBalance.

This code does not work, I'm not sure what's wrong. Can you please help me figure it out?

package Question8;

import java.io.BufferedReader;
import java.io.BufferedWriter;
import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.FileWriter;
import java.io.IOException;
import java.util.Scanner;

public class Question8Code
{

        public static void main(String[] args)
        {
                FileReader in;
                FileWriter out;

                BufferedReader readFile;

```java
BufferedWriter writeFile;
Scanner input = new Scanner(System.in);
String fileName;
String lineOfText;
String AccountBalance;
String numBalance;
File textFile;
File newFile;
File dataFile;

int numline;
double bankAccountBalances;
double totalBalance;
totalBalance = 0;
numline = 0;
int counter = 1;

//create the file
textFile = new
File("C:\\Users\\26031001\\git\\CS30Fall2023\\Chapter11\\BankAccountBalances.txt");

//Obtain file name and the number of students from the user/Write data to file
System.out.println("Enter the file name for storing the students names: ");
fileName = input.nextLine();

//Read data from file and process
try
{
        dataFile = new File(fileName);
        in = new FileReader(dataFile);
        readFile = new BufferedReader(in);

        counter++;

        while((lineOfText = readFile.readLine()) != null)
        {
                /*AccountBalance = readFile.readLine();
                lineOfText = AccountBalance;*/


                System.out.println(counter);
                AccountBalance = lineOfText;
                System.out.println(AccountBalance + " " + " ");
                numline += 1;
```

```java
                bankAccountBalances = Double.parseDouble(AccountBalance);
                totalBalance += bankAccountBalances;
                System.out.println(totalBalance + " " + " ");
                /*numBalance = lineOfText + " " + AccountBalance;
                System.out.println(lineOfText + " " + " ");
                System.out.println(numBalance + " " + " ");*/

                /*System.out.println();*/


        }//end of while loop
        readFile.close();
        in.close();

    }catch(FileNotFoundException e)
    {
        System.out.println("File does not exist. ");
        System.err.println("FileNotFoundException: "+ e.getMessage());
    }
    catch (IOException e)
    {
        System.out.println("File could not created. ");
        System.err.println("IOException: "+ e.getMessage());
    }
    }
}
```