MORE ABOUT CLASSES AND LIBRARIES (NEW Edition Included)

Type A: Very Short/Short Answer Questions

1	**Which Keyword can protect a class in a package from accessibility by the classes outside the package?** **(a) Private** **(b) Protected** **(c) Final** **(d) Don't use any keyword at all (make it default).**
Ans:	(d)Don't use any keyword at all (make it default).
2	**We would like to make a member of a class visible in all subclasses regardless of what package they are in. which one of the following keywords would achieve this?** **(a) Private** **(b) Protected** **(c) Public** **(d) Private protected.**
Ans:	(d)Private protected.
3	**The use of protected keyword to a member in a class will restrict its visibility as follows:** **(a) Visible only in the class and its subclass in the same package** **(b) Visible only inside the same package** **(c) Visible in all classes in the same package and subclasses in other packages** **(d) Visible only in the class where it is declared.**
Ans:	(c)Visible in all classes in the same package and subclasses in other packages
4	**Which of the following keywords are used to control access to a class member?** **(a) Default** **(b) Abstract** **(c) Protected** **(d) Interface** **(e) Public.**
Ans:	(b), (c) and (e)
5	**The default access specifier of class member is _____?**
Ans:	friendly
6	**What will be the scope of:** **(a) A public class?** **(b) A protected class?** **(c) A default class?** **(d) A private class?**
Ans:	A: visible to all classes B: visible to classes outside the package that inherit the class, also to all classes in the package. C: visible to all classes of the package. D: visible only within the class, not by inheritors, not by other classes in the package.
7	**What does round() return if a negative float value is passed to it?**
Ans:	If the argument is a negative float value then the result will be MIN_VALUE of int type. i.e., Integer.MIN_VALUE
8	**What will happen if you passed an argument that is not a number (NaN in Java's term) to pow() and round() method of Math library?**
Ans:	**Pow() :** if we passed an argument that is not a number then the result is a NaN.

	Round(): if we passed an argument that is not a number then the result is 0.
9	**Predefined classes are available in the form of _____.**
Ans:	package
10	**Name the package you need to import for performing input and output.**
Ans:	java.io
11	**Which package is by default imported in every java program?**
Ans:	java.lang
12	**What is the difference between equals() and equalsIgnorecase() string functions?**
Ans:	equalsIgnoreCase: Ignoring the case, it checks if the string entered is equal to the value present in the string object. equals: Case sensitive and it checks if the string entered is equal to the value present in the string object.
13	**What is the difference between length() and capacity() string functions?**
Ans:	Length returns length of a given string whereas capacity returns maximum number of character that can be entered in the string.
14	**The default package is a package without any name and is imported for you. (T/F)**
Ans:	True
15	**Which command creates a package in java?**
Ans:	import

Type B: Short/Long Answer Questions

1.	**What is friendly access of class members?**
Ans	A friendly access of class members can access all data of a class including private and protected data. The default access specifier is friendly, but it is not a keyword.
2.	**What is public access of class members?**
Ans:	The data members and methods having public as access specifier can be accessed by the class objects created outside the class.
3.	**How are private members different from public members of a class?**
Ans:	A public member may be accessed by any class. A private member may only be accessed by the class in which it is contained. **Example:**

```
// class A contains both a public int and a private int
class A {
      public int publicNumber = 0;
      private int privateNumber = 0;
}
// class B will attempt to access the members of A
class B {
      void f() {
      A a = new A();        // Create a new instance of A
      // Try to print out each member
      System.out.println(a.publicNumber);
      System.out.println(a.privateNumber);
      }
}
```

4.	**How are protected members different from public and private members of a class?**
Ans:	

protected	public	private
✓ The protected members	✓ The public members are	✓ The private members are

	are accessible inside their own class, subclass and package.	accessible everywhere in the program.	accessible only inside their own class.
	✓ **Example:** protected int iamprotected	✓ **Example:** public int iampublic	✓ **Example:** private int iamprivate

5. **How does a class enforce information hiding?**

Ans: Information hiding is a key feature of java this feature in termed as Data Encapsulation in OOP.
When we declare variable or method as private member inside a class this enforce class to hide these information inside the class.

6. **Write a program to extract a portion of character string and print the extracted string. Assume that m characters are extracted, starting with the nth character.**

Ans:

```
import java.io.*;
public class ExtractString {
    public static void main(String[] args) {
       String s,str,substr;
       int extract,start,len,check;
       try{
            BufferedReader obj = new BufferedReader(new
InputStreamReader(System.in));
            System.out.print("Enter String : ");
            System.out.flush();
            str=obj.readLine();
            len=str.length();
            System.out.print("Enter Starting position to extract
characters  : ");
            System.out.flush();
            s=obj.readLine();
            start=Integer.parseInt(s);
            start=start-1;
            if(start<0 || start>len)
            {
                 System.out.println("INVALID POSITION");
                 System.exit(1);
            }
            System.out.print("Enter how many characters you want to
extract: ");
            System.out.flush();
            s=obj.readLine();
            extract=Integer.parseInt(s);
            check=extract+start;
            if(check<0 || check>len )
            {
                 System.out.println("TRYING TO EXTRACT INVALID
POSITION");
                 System.exit(1);
            }
          substr=str.substring(start,check);
          System.out.println("\nEXTRACTED STRING IS "+substr);
        }
```

```
    catch(Exception e) {}
    }
}
```

7. **Write a program, which will read a text and count all occurrences of a particular word.**

Ans:

```
import java.io.*;
public class countWord {
  public static void main(String[] args){
    int i=0,count=0;
    String text="",s="";
    try{
        BufferedReader obj = new BufferedReader(new
InputStreamReader(System.in));
        System.out.println("Enter Text:(press ENTER twice to stop)\n");
        s=obj.readLine();
        while(s.length()!=0)
        {
            text+=s;
            s=obj.readLine();
        }
        System.out.println("Enter search word:");
        s=obj.readLine();
        while(true)
        {
            i=text.indexOf(s,i);
            if(i==-1) break;
               count++;
            i+=s.length();
        }
        System.out.println("Number of occurrences of given
word:"+count);
       }
       catch(Exception e)
       {  }
    }
}
```

8. **What is a package? How do we tell java that we want to use a particular package in a file?**

Ans: Package is a group of related classes and interfaces. If you want to use a particular package in a file then import a specific class or interface into the current file.
Example : import javax.swing.JOptionPane;

9. **How do we design a package?**

Ans: When creating a package, you should choose a name for the package and put a package statement with that name at the top of every source file that contains the classes, interfaces, enumerations, and annotation types that you want to include in the package.
The package statement should be the first line in the source file. There can be only one package statement in each source file, and it applies to all types in the file.
This is the general form of the package statement:
package pkg;

ANSWER FROM NEW EDITION BOOK

1	**What is java library? Give some examples.**
Ans.	A set of ready-made software routines (class definitions) that can be reused in new programs, is called a **Library.** **Example –** /math library, String library, utilities library, IO (Input-Output) library etc.
2	**How many different classes are available in java to work with character data?**
Ans.	There are three different classes are available in java to work with character data. 1. Character class 2. String class 3. StringBuffer class
3	**What is an accessor method?**
Ans.	Methods used to obtain information about an object are known as **accessor methods.**
4	**What does round () return if a negative float value is passed to it?**
Ans.	If the argument is a negative float value then the result will be MIN_VALUE of int type. i.e., Integer.MIN_VALUE
5	**What will happen if you passed an argument that is not a number (NaN in Java's term) to pow() and round() method of Math library?**
Ans.	**Pow() –** if we passed an argument that is not a number then the result is a NaN. **Round() –**if we passed an argument that is not a number then the result is 0.
6	**Predefined classes are available in the form of _____.**
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9	**What is difference between equals() and equalsIgnorecase() string functions?**
Ans.	**equalsIgnoreCase –** Ignoring the case, it checks if the string entered is equal to the value present in the string object. **equals –**Case sensitive and it checks if the string entered is equal to the value present in the string object.
10	**What is the difference between length() and capacity() string functions?**
Ans.	**Length** returns length of a given string whereas **capacity** returns maximum number of character that can be entered in the string.
11	**Why do we need so many string methods for comparison, e.g., equals, equalsIgnoreCase, compareTo, CompareToIgnoreCase?**
Ans.	All the method have their own specific use which are as follow – equals(): Compares this string to the specified object. equalsIgnoreCase(): Compares this String to another String, ignoring case considerations. compareTo(): Compares two strings lexicographically. CompareToIgnoreCase(): Compares two strings lexicographically, ignoring case differences.
12	**In one word, what is the difference between a String and Stringbuffer?**
Ans.	The string objects of java are immutable whereas stringbuffer objects are mutable.
13	**Write the code to display a IP 12 CBSE in a dialog box (JOPtiopnPane).**
Ans.	JOptionPane.showMessageDialog(null, "IP 12 CBSE");

14	**Write the code to display a dialogbox (JOptionPane) which asks the user his/her name. Store the returned value in a new string variable name and then display the first letter of the name.**

Ans.	`String name;`
	`name=JOptionPane.showInputDialog("enter your name");`
	`char name2;`
	`name2=name.charAt(0);`
	`JOptionPane.showMessageDialog(null, name2);`

Type A: Short/Long Answer Questions

1.	**Why is a StringBuffer class considered more flexible than String class?**
Ans.	stringBuffer class considered more flexible than string class because String class creates the strings of fixed length whereas stringBuffer class creates the strings of flexible length where we can modify the contents of a string both content and size.
2.	**Name some methods which are members of StringBuffer class but not in String class.**
Ans.	1. append(x) method 2. insert(offset, x) method 3. delete(beg, end) method 4. reverse() method 5. setLength(n) method
3.	**Which library contains contains methods for common mathematical operations i.e., abs, sin, exp, round, etc. ? How do you include this library in your program? (write statement)**
Ans.	Math library contains methods for common mathematical operations. import java.lang.Math
4.	**What will be the output of the following code?** **Math.round(1.5): 2** **Math.round(-1.5): -1**
Ans	2 -1
5.	**What is the output of the following code fragment ?** **String s="Informatics practices !";** **String t=null;** **System.out.println(s.substring(3,17));** **s=t;** **System.out.println(s.charAt(1));**
Ans.	ormatics pract Exception in thread "main" java.lang.NullPointerException //trying to copy null to variable.
6.	**What is the output of the following code fragment?** **"Welcome".toLowerCase();** **"Welcome".toupperCase();** **"Welcome".trim();** **"Welcome".replace('e', 'A');** **"Welcome".replaceFirst("e", "AB");** **"Welcome".replace("e", "AB");** **"Welcome".replace("el","AB");**
Ans.	WELCOME Welcome

	WAlcomA WABlcome WABlcomAB WABcome
7.	**What will be the output produced by the following code?** **class StringClass** **{** **public static void main(String[] args){** **//create a string** **String myString="Hello World";** **System.out.println(myString);** **//copies substring in myString2** **String myString2=myString.substring(4,8);** **System.out.println(myString2);** **//concatenates myString and myString2** **String myString3=myString+myString2;** **System.out.println(myString3.substring(3,15));** **//Compares strings** **System.out.println(myString.compareTo(myString2));** **//checks if the string are equal, '==' will not work** **System.out.println(myString.equals("Hello world"));** **System.out.println(myString.indexOf(myString2));** **//+ can work as string concatenation or addition** **System.out.println(myString.length()+" "+ (myString2.length() + myString3.length()) + myString.length());** **//UPper case strings** **System.out.println(myString.toUpperCase());** **}** **}**
Ans.	Hello World o Wo lo Worldo Wo -39 false 4 11 1911 HELLO WORLD