**Section 1**

**1. What is the output from the following code snippet?**

int[] myarray={1,2,3,4,5};

int sum=0;

for (int x : myarray)

sum+=x;

System.out.println("sum= " + sum);

The code will not compile.

20

10

15 (\*)

**2. Using the code below, what will be the output if a Student object is instantiated?**

public class Student

{

public Student()

{

System.out.print("1");

super();

System.out.print("2");

}

}

The code will not compile. (\*)

1 2

1

2

**3. What is the output from the following code?**

String s= "a,b,c";

Scanner sc = new Scanner (s);

while (sc.hasNext())

System.out.print (sc.next() +" ");

a b c

a c

a,b

a,b,c (\*)

**4. Which of following statments are true when you create a object from class Object at runtime as seen below. (Choose Three)**

java.lang.Object obj = new java.lang.Object();

(Choose all correct answers)

Reference obj can be reassigned to any other type of object. (\*)

A new instance of class Object is created. (\*)

This Object instance will not be created because you never defined class Object.

Memory is allocated for a new object, if available. (\*)

**5. What is the final value of result from the following code snippet?**

int i = 1;

int [] id = new int [3];

int result = id [i];

result = result + i;

The code will not compile, result has the value of 2

An exception is thrown.

The code will compile, result has the value of 1 (\*)

The code will compile, result has the value of 0

The code will compile, result has the value of 2

**6. Which three are valid declarations for a float value? (Choose Three)**

(Choose all correct answers)

float f = 0x345; (\*)

float f = -1; (\*)

float f = 2.0f; (\*)

float f = 1.0;

float f = 3.0L;

**7. Which two statements are access modifier keywords in Java?(Choose Two)**

(Choose all correct answers)

public (\*)

final

abstract

protected (\*)

**8. What is the output from the following code?**

int x=5;

if (x>6)

System. out. println("x>l");

else if (x>=5)

System. out .println("x>=5");

else if (x<10)

System. out. println("x<10");

else

System.out.println("none of the above");

x>=5 (\*)

x>6

x<10

None of these answers are correct

**9. What is the output from the following code snippet?**

int i=0,j=0;

i=++i;

j=i++;

System.out.println("i=" + i + " " + "j=" + j);

The code will compile and print "i=2 j=2"

The code will compile and print "i=2 j=1" (\*)

The code does not compile.

The code will compile and print "i=1 j=2"

The code will compile and print "i=1 j=1"

**10. Which statement is true when run the following statement?**

1. String str = null;

2. if ((str != null) && (str.length() > 1)) {

3. System.out.println("great that number 1");

4. } else if ((str != null) & (str.length() < 2)) {

5. System.out.println("less than number 2");

6. }

The code compiles and will throw an exception at line 5

The code compiles and will throw an exception at line 2.

The code compiles and will throw an exception at line 4. (\*)

The code does not compile.

The code compiles and will throw an exception at line 3.

**11. You declare a method:**

public void act(Student s){}

Which of following arguments can be passed into the method? (Choose Two)

(Choose all correct answers)

Type of Object class

Type of Student class (\*)

Interface

Type of the subclass of Student (\*)

**12. What is the output from the following code snippet?**

public class Test {

public static void main(String[] args) {

System.out.println(1 + 2 + "java" + 3);

}

}

The code will compile and print "6java"

The code will compile and print "12java3"

The code will compile and print "java3"

The code will compile and print "3java3" (\*)

The code does not compile.

**13. Which statements are true?(Choose Three)**

(Choose all correct answers)

Since a constructor can not return any value, it should be declared as void.

You can use access modifiers to control which other classes can call the constructor. (\*)

You can declare more than one constructor in a class declaration. (\*)

A constructor can not be overloaded.

In a constructor, you can call a superclass constructor. (\*)

**14. What is the output from the following code snippet?**

boolean status=false;

int i=1;

if( (++i>1) && (status=true))

i++;

if( (++i>3) || (status=false))

i++;

System.out .println (i);

4

5 (\*)

6

3

**15. Which of the following operators are relational operators?(Choose Two)**

(Choose all correct answers)

"!=" (\*)

"="

">=" (\*)

"+="

**1. Which of the following operators are logic operators?(Choose Two)**

(Choose all correct answers)

>

=

<=

&& (\*)

! (\*)

**3. The following code can be compiled, True/False?**

byte b = 1;

b = b + 1;

True

False (\*)

**6. What is the output from the following code snippet?**

String str1 = "java";

String str2 = "java";

System.out.println(str1.equals(str2) + "," + str1.equals(new String("hello")));

The code will compile and print "true, true"

The code will not compile.

The code will compile and print "false, true"

The code will compile and print "false, false"

The code will compile and print "true, false" (\*)

**7. What is the output from the following code snippet?**

String str1 = "java";

char[] c = {'j', 'a', 'v', 'a'};

System.out.println(str1.equals(c));

System.out.println(t == c);

The code does not compile. (\*)

The code will compile and print "true, false"

The code will compile and print "false, true"

The code will compile and print "false,false"

The code will compile and print "true true"

**8. What is the output from the following code snippet?**

int x = 1;

int y;

while(++x < 5)

y++;

System.out.println(y);

1

The code will not compile. (\*)

4

3

**10. What is the output from the following code?**

System.out.print("i=");

for (int i=0; i < l0; i++){

if(i==3)

break;

System.out.print(i);

}

i=0123

i=012 (\*)

i=012456789

i=0123456789

**13. Which two statements best describe data encapsulation? (Choose Two)**

(Choose all correct answers)

Member data can be modified directly.

The access modifier for methods is protected.

The access modifier to member data is private. (\*)

Methods provide for access and modification of data. (\*)

**14. Which ofthe following declarations are wrong?(Choose Three)**

(Choose all correct answers)

abstract final class Hello{} (\*)

protected private int id; (\*)

abstract private void act(){} (\*)

public abstract class Student{}

**15. Which combination of the following overload the Student constructor?(Choose Two)**

(Choose all correct answers)

public Student(){} (\*)

public void Student(int x, int y){}

protected int Student(){}

public Student(int x,int y){} (\*)

public Object Student(int x,int y){}

**Section 2**

(Answer all questions in this section)

**1. An abstract class can implement its methods.**

True or false?

True (\*)

False

**2. A upward cast means all instance variables of the subclass are permanently lost to the instance.**

True or false?

True

False (\*)

**3. Which two of the following statements are true? (Choose Two)**

(Choose all correct answers)

An abstract class can create subclass and be constructed.

An abstract class must be difined by using the abstract keyword. (\*)

An abstract class can define constructor. (\*)

An abstract class must contain abstrct method.

**4. Calling a subclass method by referring to a superclass works because you have access to all specialized methods through virtual method invocation.**

True or false?

True

False (\*)

**5. The state of an object differentiates it from other objects of the same class.**

True or False?

True (\*)

False

**6. Modeling business problems requires understanding the interaction between interfaces, abstract and concrete classes, subclasses, and enum classes.**

True (\*)

False

**7. Immutable classes do allow instance variables to be changed by overriding methods.**

**True or false?**

True

False (\*)

**8. What is the output from the following code?**

public class Foo{

public static void main(String[] args){

try {return;}

finally{System.out.println("you are in Finally");}

}

}

The code will not compile.

The code compiles and print nothing

The code compiles and prints out ﾓyou are in Finally" (\*)

The code compiles, but an exception is thrown.

**9. What is special about including a resource in a try statement?(Choose Two)**

(Choose all correct answers)

The program will fail if the resource does not open.

The resources will auto-close. (\*)

An error will be thrown if the resources does not open. (\*)

**10. What is exception handling?**

An error that occurs against the flow of your program.

A consistent way of handling various errors. (\*)

If your program exits before you expect it to.

When a file fails to open.

**11. What symbol(s) is used to separate multiple exceptions in one catch statement?**

None, multiple exceptions can't be handled in one catch statement.

(==) (equals equals)

&&

A single vertical bar | (\*)

**12. Methods can not throw exceptions.**

True or false?

True

False (\*)

**13. Which of the following statements about inheritance is false?**

A subclass inherits all the members (fields, methods, and nested classes) from its superclass.

Inheritance allows you to reuse the fields and methods of the super class without having to write them yourself.

Inheritance allows you to minimize the amount of duplicate code in an application by sharing common code among several subclasses.

Through inheritance, a parent class is a more specialized form of the child class. (\*)

**14. Which of the following is not a good technique to follow when reading code written by others?**

Understand the constructs.

Build and run the code.

Learn the high level structure and starting point, and then figure out how it branches.

Perform testing.

Find the author of the code and ask him how it works. (\*)

**15. Which of the following statements is false?**

An ArrayList can grow and shrink dynamically as required.

An ArrayList can store multiple object types.

In an Array you need to know the length and the current number of elements stored.

An ArrayList has a fixed length. (\*)

**1. In general, classes can be made immutable by placing a final key word before the class keyword.**

True or false?

True (\*)

False

**2. Modeling business problems requires understanding the interaction between interfaces, abstract and concrete classes, subclasses, and enum classes.**

True (\*)

False

**3. An interface can implement methods.**

True or False?

True

False (\*)

**4. Which statement is true for the class java.util.ArrayList?**

The elements in the collection are immutable.

The elements in the collection are accessed using key.

The elements in the collection are synchronized.

The elements in the collection are ordered. (\*)

**6. The main purpose of unit testing is to verify that an individual unit (a class, in Java) is working correctly before it is combined with other components in the system. True or false?**

True (\*)

False

**7. Calling a subclass method by referring to a superclass works because you have access to all specialized methods through virtual method invocation.**

**True or false?**

True

False (\*)

**9. A downward cast of a superclass to subclass allows you to access a subclass specialized method call.**

**True or false?**

True (\*)

False

**10. Upward casting an object instance means you can't access subclass specific methods.**

**True or false?**

True (\*)

False

**11. What is the output from the following code snippet?**

public static void main(String[] args){

try{

String[] s=null;

s[0]="Java";

System.out.println(s[0]);

}catch(Exception e) {

System.out.println("Exception");

}catch(NullPointerException e){

System.out.println("NullPointerException");

}

Compile fails (\*)

Exception

Java

NullPointerException

**13. In what order do multiple catch statements execute?**

The order they are declared in ( most specific first). (\*)

They all execute at the same time.

The order they are declared in (most general first).

None of them execute since you cannot have multiple catch statements.

**14. Assertions are optional ways to catch logic errors in code.**

True or false?

True (\*)

False

**15. When are control flow invariants used?**

To test the correct flow of your code. (\*)

To test compilation errors in your code.

To test run time errors in code.

To test specific variable values of your code.

**1. Virtual method invocation occurs:**

Not part of polymorphism.

When the method of a superclass is used on a superclass reference.

When the method of a subclass is used on a superclass reference. (\*)

When the method of a subclass is used on a subclass reference.

**2. What is the result of the following code snippet??**

1. abstract class AbstractBankAccount {

2. abstract int getBalance ();

3. }

4. public class CreditAccount extends AbstractBankAccount{

5. private int balance;

6. private int getBalance (){

7. return balance;

8. }

9.}

An error at line 2 causes compilation to fail.

An error at line 6 causes compilation to fail. (\*)

An error at line 4 causes compilation to fail.

Compilation is successful.

**3. When line 10 is executed, which method will be called?**

1 class Account {

2 public void deposit(int amt, int amt1) { }

3 public void deposit(int amt){ }

4 }

5 public class CreditAccount extends Account {

6 public void deposit() { }

7 public void deposit(int amt) {}

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

9 Account account = new CreditAccount();

10 account.deposit(10);

11 }

12 }

line 6

line 3

line 2

line 7 (\*)

**4. You can't downcast an object explicitly because you must use virtual method invocation.**

True or false?

True

False (\*)

**5. What is the result from creating the following try-catch block?**

1.try {

2.} catch (Exception e) {

3.} catch (ArithmeticException a) {

4.}

Compile fails at Line 1

Compile fails at Line 3 (\*)

Compile fails at Line 2

The code compiles

**7. When do you use try-catch statements?**

If you want to switch different values for a certain variable.

When you want to exit your code before an exception is caught.

When you want to handle an exception. (\*)

Every time you would like to assign a new value to a variable that is being asserted.

**8. This is correct syntax for catching an exception:**

try(inputStream = "missingfile.txt");

catch(exception e);

True or false?

True

False (\*)

**10. Unit testing can help you isolate problem quickly. True or False?**

True (\*)

False

**11. Examine the following code snippet. What is this an example of?**

public class Car extends Vehicle {

public Car() {

...

}

}

Comments

Inheritance (\*)

Polymorphism

Encapsulation

**12. Unit testing is the phase in software testing in which individual software modules are combined and tested as a whole. True or false?**

True

False (\*)

**15. An interfaces can declare public constants.**

True or False?

True (\*)

False

**2. The instanceof operator works with class instances and primitive data types.**

True or false?

True

False (\*)

**3. The instanceof operator allows you to determine the type of an object.**

True or false?

True (\*)

False

**6. Reading great code is just as important for a programmer as reading great books is for a writer. True or false?**

True (\*)

False

**7. In the relationship between two objects, the class that is being inherited from is called the maxi-class. True or false?**

True

False (\*)

**9. All classes can by subclassed.**

True

False (\*)

**10. Modeling classes for a business problem requires understanding of the business not Java. True or false?**

True

False (\*)

**11. The finally clause only executes when an exception is not caught and thrown.**

**True or false?**

True

False (\*)

**14. What is one step you must do to create your own exception?**

Declare the primitive data type Exception.

Create a new class that extends Exception. (\*)

Create a new class that implements Exception.

Exceptions cannot be created. They are only built in to Java.

**15. Why should you not use assertions to check parameters?**

It is hard to assume expected values for parameters.

Assertions do not work on parameters.

Assertions can be disabled at run time which may cause unexpected results in your assertions. (\*)

Not all methods have parameters, therefore assertions should never be used on parameters.

**3. You can only implement one interface in a class.**

True or False?

True

False (\*)

**6. What do Arrays and ArrayLists have in common?**

I. They both store data.

II. They can both be traversed in loops.

III. They both can be dynamically re-sized during execution of a program.

I only

II only

I and II only (\*)

I, II and III only

None of these

**11. What is the output from the following code snippet?**

class Shape{

public void paint(){System.out.print("Shape");}

class Circle extends Shape{

public void paint() throws Exception{

System.out.print("Circle ");

throw new Exception();

}

public static void main(String[] args){

try{new Circle().paint();}

catch(Exception e){System.out.println("Exception");

}

}

Circle

Compile fails (\*)

Exception

ShapeCircle

Shape

**12. A upward cast means all instance variables of the subclass are permanently lost to the instance.**

True or false?

True

False (\*)

**13. Upward casting an object instance means you can't access subclass specific methods.**

**True or false?**

True (\*)

False

**14. Which line contains an compilation error?**

interface Shape {}

interface InnerShape extends Shape{}

class Circle implements Shape{ }

class InnerCircle extends Circle{}

class Rectangle implements Shape{}

public class Tester {

public static void main(String[] args) {

Circle c= new Circle();

InnerCircle ic = new InnerCircle();

Rectangle rect = new Rectangle();

System.out.print(c instanceof InnerCircle); //Line 1

System.out.print(ic instanceof Circle); //Line 2

System.out.print(rect instanceof InnerCircle); //Line 3

System.out.print(rect instanceof Shape); //Line 4

}

}

Line 1

Line 3 (\*)

Line 2

Line 4

**15. Virtual method invocation occurs when you try to call a superclass method.**

**True or false?**

True

False (\*)

**Section 3**

**1. Which of the following methods adds a Key-Value map to a HashMap?**

remove(Key, Value)

add(Key, Value)

get(Key, Value)

put(Key, Value) (\*)

**2. A HashMap can only store String types.**

True or false?

True

False (\*)

**3. Which statements, inserted it at line 2, will ensure that the code snippet will compile successfully.(Choose Two):**

1.public static void main (String[]args) {

2,//insert code here

3. s.put ("StudentID", 123);

4.}

(Choose all correct answers)

SortedMap s= new TreeMap(); (\*)

ArrayList s= new ArrayList();

Map s= new SortedMap();

HashMap s= new HashMap(); (\*)

**4. To allow our classes to have a natural order we could implement the Comparable interface.**

**True or false?**

True (\*)

False

**5. Which of the following best describes lexicographical order?**

A simple sorting algorithm that is inefficient on large arrays.

An order based on the ASCII value of characters. (\*)

A complex sorting algorithm that is efficient on large arrays.

The order of indicies after an array has been sorted.

**6. Selection sort is a sorting algorithm that involves finding the minimum value in the list, swapping it with the value in the first position, and repeating these steps for the remainder of the list.**

True or false?

True (\*)

False

**7. Of the options below, what is the fastest run-time?**

n

n\*log(n)

log(n) (\*)

n^2

**8. A sequential search is an iteration through the array that stops at the index where the desired element is found. True or false?**

True (\*)

False

**9. An example of an upper bounded wildcard is:**

ArrayList<? extends Animal> (\*)

ArrayList<? super Animal>

ArrayList<T>

ArrayList<?>

**10. < ? > is an example of a bounded generic wildcard.**

True or False?

True

False (\*)

**11. A generic class is a type of class that associates one or more non-specific Java types with it.**

**True or False?**

True (\*)

False

**12. public static void <T> printArray(T[] array){....**

is an example of what?

A generic instance

A generic method (\*)

A concreate method.

A generic class

**13. Which code inserted into the code below guarantees that the program will output [1,2]?**

**import java.util.\*;**

public class Example{

public static void main(String[] args){

//insert code here

set.add(2);

set.add(1);

System.out.println(set);

}

}

Set set = new LinkedHashSet();

Set set = new SortedSet();

List set = new SortedList();

Set set = new HashSet();

Set set = new TreeSet(); (\*)

**14. Choose the best definiton for a collection.**

It is a special type of class that is associated with one or more non-specified Java type.

It is a subclass of List.

It enables you to create a generic class without specifying a type between angle brackets <>.

It is an interface in the java.util package that is used to define a group of objects. (\*)

**15. What is the output from the following code snippet?**

TreeSet <String> t = new TreeSet<String>();

if (t.add("one"))

if (t.add("two"))

if (t.add ("three"))

t.add("four");

for (String s : t)

System.out.print (s);

The code does not compiles.

fouronethreetwo (\*)

twofouronethree

onetwothreefour

**1. Which class is an ordered collection that may contain duplicates?**

list (\*)

set

array

enum

**3. The following code is valid when working with the Collection Interface.**

**Collection collection = new Collection()d;**

**True or false?**

True

False (\*)

**4. Generic methods are required to be declared as static.**

**True or False?**

True

False (\*)

**5. Which of the following correctly initializes an object named cell of the class Telephones whose generic type is Cellular?**

Telephones cell = new Telephones(Cellular c);

Telephones(Cellular) cell = new Telephones(Cellular);

Telephones<> cell = new Telephones<>(Cellular c);

Telephones<Cellular> cell = new Telephones<Cellular>(); (\*)

None of the these.

**6. The local petting zoo is writing a program to be able to collect group animals according to species to better keep track of what animals they have.**

**Which of the following correctly defines a collection that may create these types of groupings for each species at the zoo?**

public class

animalCollection<AnimalType> {...} (\*)

public class

animalCollection(AnimalType T) {...}

public class

<animalType>animalCollection {...}

public class

animalCollection(animalType) {...}

None of the these.

**7. What is the output from the following code snippet?**

public static void main(String[] args){

List<Integer> li=new ArrayList();

li.add(1);

li.add(2);

print(li);

}

public static void print(List<? extends Number> list) {

for (Number n : list)

System.out.print(n + " ");

}

1

2

1 2 (\*)

The code will not compile.

**8. FIFO stands for:**

Fast Interface Fast Output

First In First Out (\*)

First Interface First Output

Fast In Fast Out

**10. A HashMap can store duplicates.**

**True or false?**

True

False (\*)

**13. Big-O Notation is used in Computer Science to describe the performance of Sorts and Searches on arrays. True or false?**

True (\*)

False

**14. Which of the following is a sorting algorithm that involves repeatedly incrementing through the array and swapping 2 adjacent values if they are in the wrong order until all elements are in the correct order?**

Merge Sort

Binary Search

Bubble Sort (\*)

Selection Sort

Sequential Search

**15. Why might a sequential search be inefficient?**

It utilizes the "divide and conquer" method, which makes the algorithm more error prone.

It requires incrementing through the entire array in the worst case, which is inefficient on large data sets. (\*)

It involves looping through the array multiple times before finding the value, which is inefficient on large data sets.

It is never inefficient.

**1. Generic methods can only belong to generic classes.**

True or False?

True

False (\*)

**3. What is the result from the following code snippet?**

public static void main(String[] args) {

List <Gum> list1 = new ArrayList<Gum>();

list1.add(new Gum());

List list2 = list1;

list2.add(new Integer(9));

System.out.println(list2.size());

}

2 (\*)

1

an exception will be thrown at runtime

The code will not compile.

**4. When would an enum (or enumeration) be used?**

When you already know all the possibilities for objects of that class. (\*)

When you want to be able to create any number of objects of that class.

When you wish to initialize a HashSet.

When you wish to remove data from memory.

**6. A LinkedList is a type of Stack.**

**True or False?**

True (\*)

False

**7. Nodes are components of LinkedLists, and they identify where the next and previous nodes are.**

**True or false?**

True (\*)

False

**8. Which scenario best describes a stack?**

A pile of pancakes with which you add some to the top and remove them one by one from the top to the bottom. (\*)

A row of books that you can take out of only the middle of the books first and work your way outward toward either edge.

A line at the grocery store where the first person in the line is the first person to leave.

All of the above describe a stack.

**11. Binary searches can be performed on sorted and unsorted data.**

**True or false?**

True

False (\*)

**12. Which searching algorithm involves using a low, middle, and high index value to find the location of a value in a sorted set of data (if it exists)?**

Sequential Search

Merge Sort

Selection Sort

Binary Search (\*)

All of the above

None of the above.

**13. A HashSet is a set that is similar to an ArrayList. A HashSet does not have any specific ordering.**

**True or false?**

True (\*)

False

**Section 4**

**1. Which of the following methods for the String class take a regular expression as a parameter and returns true if the string matches the expression?**

matches(String regex) (\*)

equalsIgnoreCase(String regex)

equals(String regex)

compareTo(String regex)

**2. Consider designing a program that organizes your contacts alphabetically by last name, then by first name. Oddly, all of your contacts' first and last names are exactly five letters long.**

**Which of the following segments of code establishes a Pattern namePattern with a group for the first name and a group for the last name considering that the string contactsName is always in the format lastName\_firstName?**

Pattern namePattern = Pattern.compile("(.{5})\_(.{5})"); (\*)

Pattern namePattern = Pattern.compile("first\_last");

Pattern namePattern = new Pattern(last{5},first{5});

Pattern namePattern = new Pattern();

None of the above.

**3. Matcher has a find method that checks if the specified pattern exists as a sub-string of the string being matched.**

True or false?

True (\*)

False

**4. Which of the following correctly defines Pattern?**

A class in the java.util.regex package that stores matches.

A method of dividing a string into a set of sub-strings.

A regular expression symbol that represents any character.

A class in the java.util.regex package that stores the format of a regular expression. (\*)

**5. Which of the following does not correctly match the regular expression symbol to its proper function?**

"{x}" means there must be x occurrences of the preceding character in the string to be a match.

"?" means there may be zero or one occurrences of the preceding character in the string to be a match.

"+" means there may be zero or more occurrences of the preceding character in the string to be a match. (\*)

"{x,}" means there may be x or more occurrences of the preceeding character in the string to be a match.

"{x,y}" means there may be between x and y occurrences of the preceding character in the string to be a match.

None of the above.

**6. What is the result from the following code?**

public class Test {

public static void main(String[] args) {

String str = "91204";

str += 23;

System.out.print(str);

}

}

23

9120423 (\*)

Compile fails.

91227

91204

An exception is thrown at runtime.

**7. Which of the following methods are StringBuilder methods?**

append

delete

insert

replace

All of the above. (\*)

None of the above.

**8. What class is the split() method a member of?**

String (\*)

Array

StringBuilder

Parse

**9. Which of the following methods can be used to replace a segment in a string with a new string?**

remove(String oldString, String newString)

replaceAll(String oldString, String newString) (\*)

replaceAll(String newString)

substring(int start, int end, String newString)

None of the above. There is no replaceAll(String newString) method with one argument.

**10. Which of the following correctly defines a StringBuilder?**

A class that represents a string-like object. (\*)

A class inside the java.util.regex package.

A method that adds characters to a string.

There is no such thing as a StringBuilder in Java.

**11. A linear recursion requires the method to call which direction?**

Forward

Backward (\*)

Both forward and backward

None of the above

**12. A linear recursive method can call how many copies of itself?**

1 (\*)

2 or more

None

**13. Which two statements can create an instance of an array? (Choose Two)**

**(Choose all correct answers)**

double da = new double [5];

Object oa = new double[5]; (\*)

int ia[][] = (1,2,3) (4,5,6);

int[] ia = new int [5]; (\*)

char[] ca = "java";

**14. The base case condition can work with a constant or variable.**

True or false?

True (\*)

False

**15. Forward thinking helps when creating linear recursive methods.**

True or false?

True

False (\*)

**1. Your teacher asks you to write a segment of code that returns true if String str contains zero or one character(s) and false otherwise. Which of the following code segments completes this task?(Choose Two)**

**(Choose all correct answers)**

return str.contains(".");

return str.matches(".?"); (\*)

if( str.length() == 0 || str.length() == 1)

{ return true;}

return false; (\*)

return str.matches("[a-z]\*");

**3. Which of the following correctly initializes a Matcher m for Pattern p and String str?**

Matcher m = new Matcher();

Matcher m = p.matcher(str); (\*)

Matcher m = str.matcher(p);

Matcher m = new Matcher(p,str);

**4. What does the dot (.) represent in regular expressions?**

An indication for one or more occurrences of the preceding character.

A match for any character. (\*)

A range specified between brackets that allows variability of a character.

Nothing, it is merely a dot.

**6. Which case does a recursive method call last?**

Recursive Case

Convergence Case

Basic Case

Base Case (\*)

None of the above

**10. A non-linear recursive method can call how many copies of itself?**

1

2 or more (\*)

None

**13. Using the FOR loop method of incrementing through a String is beneficial if you desire to: (Choose Three)**

**(Choose all correct answers)**

Search for a specific character or String inside of the String. (\*)

Parse the String. (\*)

Read the String backwards (from last element to first element). (\*)

You don't use a FOR loop with Strings

**14. Which of the following correctly initializes a StringBuilder?**

StringBuilder sb = "This is my String Builder";

StringBuilder sb = StringBuilder(500);

StringBuilder sb = new StringBuilder(); (\*)

None of the above.

**1. Square brackets are a representation for any character in regular expressions "[ ]".**

**True or false?**

True

False (\*)

**2. What is the function of the asterisk (\*) in regular expressions?**

Indicates that the preceding character may occur 1 or more times in a proper match.

The asterisk has no function in regular expressions.

Indicates that the preceding character may occur 0 or 1 times in a proper match.

Indicates that the preceding character may occur 0 or more times in a proper match. (\*)

**3. Which of the following correctly defines a repetition operator?**

A symbol that represents any character in regular expressions.

A method that returns the number of occurrences of the specified character.

symbol in regular expressions that indicates the number of occurrences a specified character appears in a matching string. (\*)

None of the above.

**10. Which of the following are true about parsing a String?(Choose Three)**

**(Choose all correct answers)**

It is possible to use the String.split() method to parse a string. (\*)

It is possible to use a for loop to parse a string. (\*)

It is not possible to parse a string using regular expressions.

It is a way of dividing a string into a set of sub-strings. (\*)

**Section 5**

**1. When you import a package, subpackages will not be imported.**

True or false?

True (\*)

False

**2. If a programmer uses the line**

import com.test.\*,

there is no need to use

import com.test.code.\*

True or false?

True

False (\*)

**3. What option do you choose from the File menu in Eclipse to start the process of creating a runnable JAR file?**

Properties

Export (\*)

Import

Switch Workspace

**4. To deploy java applications you may use Java Web Start.**

**True or false?**

True (\*)

False

**5. Which of the following files are not required to be uploaded to a web server to deploy a JWS java application/applet?**

jar files

JNLP files

html files

.java files (\*)

None of the above

**6. Java 7 requires you create an instance of java.nio.file.File class.**

**True or false?**

True

False (\*)

**7. Which of these construct a DataInputStream instance?**

New dataInputStream("java.txt");

New dataInputStream(new InputStream("java.txt"));

New dataInputStream(new writer("java.txt"));

New dataInputStream(new file("java.txt"));

New dataInputStream(new FileInputStream("java.txt")); (\*)

**8. The new Paths class lets you resolve .. (double dot) path notation.**

**True or false?**

True (\*)

False

**9. The Files class can perform which of the following functions?**

Navigates the file system

Works with absolute paths

Creates files (\*)

Works with relative paths

Works across disk volumes

**10. Which of the following is an absolute Windows path?**

C:\Users\UserName\data (\*)

data

\Users\UserName\data

/home/user/username

/

**11. Which of the following static methods is not provided by the Files class to check file properties or duplication?**

Files.isReadable(Path p);

Files.isHidden(Path p);

Files.isArchived(Path p); (\*)

Files.isWritable(Path p);

**12. An ObjectInputStream lets you read a serialized object.**

True or false?

True (\*)

False

**13. The System.in is what type of stream?**

A Reader stream

An InputStream (\*)

A PrintStream

A BufferedReader stream

A BufferedWriter stream

**14. The System.out is what type of stream?**

An OutputStream

A BufferedWriter stream

A PrintStream (\*)

A BufferedReader stream

A Reader stream

**15. The read() method of java.io.Reader class lets you read a character at a time.**

True or false?

True (\*)

False

**1. The import keyword allows you to access classes of the package without package Fully Qualified Name.**

True or false?

True (\*)

False

**3. If a class is in a package, the system's CLASSPATH must be altered to access the class.**

**True or false?**

True

False (\*)

**4. A jar file is built on the ZIP file format and is used to deploy java applets.**

**True or false?**

True (\*)

False

**5. Which of the following is not a reason to use a Java package?**

It is a way to organize files when a project consists of multiple modules.

It is a way to help resolve naming conflicts when different packages have classes with the same names.

It is a way to protect data from being used by the non-authorized classes.

It is a way to allow programmers to receive packets of information from databases. (\*)

None of the above

**7. The java.io package has problems with no support for symbolic links.**

**True or false?**

True (\*)

False

**8. The java.nio.file package has improved exception handling.**

**True or false?**

True (\*)

False

**9. The way that you read from a file has changed since the introduction of Java 7.**

**True or false?**

True (\*)

False

**11. The Files class lets you check for file properties.**

**True or false?**

True (\*)

False

**12. The BufferedOutputStream is a direct subclass of what other class?**

DigestOutputStream

FilterOutputStream (\*)

ObjectOutputStream

PrintStream

OutputStream

**13. Which statement determine that "java" is a directory?**

Boolean isDir=Directory.exists ("java");

Boolean isDir=(new File("java")).isDirectory();

Boolean isDir=(new File("java")).isDir();

Boolean isDir=(new Directory("java")).exists(); (\*)

**14. The Files class provides a instance method that creates a new BufferedReader.**

**True or false?**

True (\*)

False

**1. Which of the following is an attribute of a three tier architecture application?**

an application of that type has a client and server only

a complex application that includes a client, a server and database (\*)

an application of that type runs on a single computer

None of the above

All of the above

**7. Prior to Java 7, you write to a file with a call to the BufferedWriter class's write() method.**

**True or false?**

True (\*)

False

**10. The normalize() method removes redundant name elements from a qualified path.**

**True or false?**

True (\*)

False

**12. You can read input by character or line.**

**True or false?**

True (\*)

False

**15. The Paths class provides a static get() method to find a valid Path.**

**True or false?**

True (\*)

False

**Section 6**

**1. What type of JDBC driver will convert the database invocation directly into network protocol?**

Type 1 driver

Type 2 driver

Type 3 driver

Type 4 driver (\*)

**2. Which of the following classes or interfaces are included in the database vendor driver library? (Choose two)**

Statement interface implementation (\*)

Java.sql.Connection

Javax.sql.DataSource

Javax.sql.DataSource implementation (\*)

Java.sql.DriverManager implementation

**3. Which of the following is a valid JDBC URL?**

oracle:thin:localhost@dfot/dfot:1521/xepdb1

jdbc::oracle-thin:dfot/dfot@oracle:1521/xepdb1

jdbc:oracle:thin:dfot/dfot@localhost:1521/xepdb1 (\*)

oracle:thin:jdbc:dfot/dfot@localhost:1521/xepdb1

**4. The java.sql.DriverManager class will typically be registered with a naming service based on the Java Naming Directory (JNDI) API.**

True

False (\*)

**5. To execute a stored SQL procedure, which JDBC interface should be used?**

Statement Interface

PreparedStatement Interface

PrePreparedStatement Interface

CallableStatement Interface (\*)

**6. Which of the following is the correct order to close the database object?**

ResultSet, Statement, Connection (\*)

Connection, Statement, ResultSet

Statement, Connection, ResultSet

ResultSet, Connection, Statement

Statement,ﾠResultSet,ﾠConnection

**7. How many categories of JDBC drivers are there?**

1

2

3

4 (\*)

**8. Which the following statements is NOT TRUE about DataSource?**

DataSource can be implemented as a pool of connections.

DataSource can participate in the Distributed transaction.

DataSource can manage a set of JDBC Drivers registered in the system. (\*)

DataSource will typically be registered with a naming service.

**9. Suppose that you have a table EMPLOYEES with three rows. The first\_name in those rows are A, B, and C. What does the following output?**

String sql = "select first\_name from Employees order by first\_name desc";

Statement stmt=conn.createStatement = (ResultSet.TYPE\_SCROLL\_SENSITIVE,ResultSet.CONCUR\_READ\_ONLY);

ResultSet rset= stmt.executeQuery(sql);

rset.absolute(1);

rset.next();

System.out.println(rset.getString(1));

A

B (\*)

C

The code does not compile.

A SQLException is thrown.

**10. Which of the following can fill in the //INSERT HERE correctly? (Choose Two)**

ResultSet rset = stmt.executeQuery(sqlQuery);

if(rs.next()){

//INSERT HERE

}

Object s = rs.getObject(1); (\*)

String s = rs.getString(1);

String s = rs.getObject(0);

String s = rs.getString(0);

**11. Which symbol is used as a placeholder to pass parameters to a PreparedStatement or CallableStatement?**

!

? (\*)

@

#

**12. JDBC has a type system that can control the conversion between Oracle database types and Java types.**

True (\*)

False

**13. From JDBC, how would you execute DML statements (i.e. insert, delete, update) in the database?**

By making use of the execute(...) statement from DataStatement Object

By invoking the executeDelete(...), executeUpdate(...) methods of the DataStatement

By invoking the execute(...) or executeUpdate(...) method of a JDBC Statement object or sub-interface object (\*)

By invoking the DeleteStatement or UpdateStatement JDBC object

**14. Which type of Statement can execute parameterized queries?**

ParameterizedStatement

CallableStatement and ParameterizedStatement

PreparedStatement (\*)

All of the above

**15. Which of the following methods will move the cursor, returning a Boolean value from the ResultSet Object?**

beforeFirst() (\*)

absolute()

afterFirst()

afterLast()

beforeLast()

previous() (\*)

**3. The java.sql.DriverManager class will typically be registered with a naming service based on the Java Naming Directory (JNDI) API.**

True

False (\*)

**4. Which of the following is NOT a JDBC interface used to execute SLQ statements?**

Statement Interface

PreparedStatement Interface

PrePreparedStatement Interface (\*)

CallableStatement Interface

**7. Given the following code, assume there are rows of data in the table EMP. What is the result?**

1 Connection conn - new Connection(URL);

2 Statement stmt = conn.createStatement();

3 ResultSet result - stmt.executeQuery("select count(\*) from EMP");

4 if(rs.next()){

5 System.out.println(rs.getInt(1));

6 }

Compiler error on line 2

Runtime error on line 3

2

0

Compiler error on line 1 (\*)

**10. JDBC has a type system that can control the conversion between Oracle database types and Java types.**

True (\*)

False

**13. Which JDBC interface can be used to access information such as database URL, username and table names?**

Statement Interface

PreparedStatement Interface

DatabaseMetaData Interface (\*)

CallableStatement Interface

**15. Which of the following is the correct statement be inserted at //INSERT CODE location that calls the database-stored procedure sayHello?**

class Test{

public static void main(String[] args) {

try {

Connection conn = getConnection();

//INSERT CODE

cstat.setString(1, "Hello");

cstat.registerOutParameter(2, Types.NUMERIC);

cstat.setInt(2, 10);

}

catch(SQLException e){}

}

}

CallableStatement cstat = con.prepareCall("{sayHello(?, ?)}");

CallableStatement cstat = con.prepareCall("{call procedure\_sayHello (?, ?)}");

CallableStatement cstat = con.prepareCall("{call sayHello}");

CallableStatement cstat = con.prepareCall("sayHello(?, ?)");

CallableStatement cstat = con.prepareCall("{call sayHello(?, ?)}"); (\*)

**7. The java.sql.DriverManager class will typically be registered with a naming service based on the Java Naming Directory (JNDI) API.**

True

False (\*)

**8. From JDBC, how would you execute DML statements (i.e. insert, delete, update) in the database?**

By making use of the execute(...) statement from DataStatement Object

By invoking the executeDelete(...), executeUpdate(...) methods of the DataStatement

By invoking the execute(...) or executeUpdate(...) method of a JDBC Statement object or sub-interface object (\*)

By invoking the DeleteStatement or UpdateStatement JDBC object

**Section 7**

**1. Which of the following allows the programmer to destroy an object referenced by x?**

x.remove();

x.finalize();

x.delete();

Only the garbage collection system can destroy an object. (\*)

**2. Given the following output from the Minor GC:**

**[GC [DefNew: 4032K->64K(4032K), 0.0429742 secs] 9350K->7748K(32704K), 0.0431096 secs]**

**What estimated percentage of the Java objects will be promoted from Young space to Tenured space?**

0.2

0.4

0.6 (\*)

0.8

0.9

**3. Which of following statements describes Parallel and Serial Garbage collection?**

A Serial garbage collector uses multiple threads to manage heap space.

A Parallel garbage collector uses multiple threads to manage heap space. (\*)

A Parallel garbage collector uses multiple threads to manage stack space.

A Serial garbage collector uses multiple threads to manage stack space.

**4. Which of the following statements is NOT TRUE for the JVM heap?**

Java Developer can explicitly allocate and deallocate the Heap Memory. (\*)

The Heap can be managed by the Garbage Collector.

The Heap can be shared among all Java threads.

Class instance and arrays are allocated in the Heap Memory.

**5. In which area of heap memory are newly created objects stored?**

Survivor Space 0

Survivor Space 1

Eden (\*)

Tenured

**6. Given the following output from the Minor GC:**

**[PSYoungGen: 9200K->1008K(9216K)] 9980K->3251K(19456K), 0.0045753 secs] [Times:user=0.03 sys=0.03, real=0.00 secs]**

**Which of the following statements is TRUE?**

The pause time spent in GC is 0.03.

The size of the entire heap is 19456k (\*)

This is a major garbage collection process.

The size of the tenured space is 19456k.

**7. Given the following code snippet:**

**String str = new String("Hello");**

**The "Hello" String literal will be located in which memory area in the JVM during runtime?**

In the Heap area of the run-time data area in the JVM.

In the Method area of the run-time data area in the JVM.

In the Stack area of the run-time data area in the JVM.

In the constant pool area of the run-time data area in the JVM. (\*)

**8. Which of the following statements describe the Java programming language?**

Java is a high-level programming language.

The Java programming language includes a garbage collection feature.

Java is an object oriented programming language.

All of the above (\*)

**9. One of the primary goals of the Java platform is to provide an interpreted, just-in-time run time environment.**

True (\*)

False

**10. Which of the following statements is NOT TRUE about the JVM?**

The JVM is a virtual Machine that acts as an intermediary layer between the Java Application and the Native Operating System.

The JVM reads byte code from the class file, and generates machine code.

The JVM does not understand the Java language specification.

The JVM reads Java source code, and then translates it into byte code. (\*)

**11. Which of the following statements describe Java technology?**

It is a programming language.

It is a development environment.

It is a deployment environment.

All of the above (\*)

**12. Which of the following statements is NOT true of the Java programming language?**

All source code is written in plain text files with the extension .java.

Java source code files are compiled into .class files by the javac command.

The javac command can be used to run a Java application. (\*)

A .class file contains platform independent bytecode.

**13. Which of the following converts a human-readable file into a platform-independent code file in Java?**

JRE

JDK

javac command (\*)

java command

**14. Where does an object of a class get stored?**

Stack area

Method area

In the file

In the database

Heap area (\*)

**15. During runtime, the Java platform loads classes dynamically as required.**

True (\*)

False

**5. The function of Garbage Collection in Java is:**

The JVM uses GC to clear the program output.

The JVM GC deletes all unused Java files on the system.

Memory occupied by objects with no reference is automatically reclaimed for reuse. (\*)

As a Java programmer, we have to call the GC function specifically in order to manage the Java Memory.

**6. Given the following code snippet:**

**String str = new String("Hello");**

**The str variable will be located in which memory area in the JVM during runtime?**

str will stay in the heap area of the run-time data area in the JVM.

str will stay in the method area of the run-time data area in the JVM.

str will stay in the stack area of the run-time data area in the JVM. (\*)

str will stay in the heap area of the constant pool run-time data area in the JVM.

**10. Given the java snippet below:**

**public class Foo{**

**int x;**

**public void testFoo(){**

**int y=100;**

**}**

**}**

**Which of the following statements is TRUE?**

Compile error, as the variable x is not initialized.

Variable x resides in the stack area, and variable y resides in the heap of the JVM.

Variable x resides in the heap area, and variable y resides in the stack of the JVM (\*)

Variable x stays in the heap area, and variable y resides in the method area of the JVM.

**13. During runtime, the Java platform loads classes dynamically as required**.

True (\*)

False

**15. Java allows the same Java program to be executed on multiple operating systems.**

True (\*)

False

**1. One of the primary goals of the Java platform is to provide an interpreted, just-in-time run time environment.**

True (\*)

False

**Section 8**

**1. Which structure in the Java class file contains the line number information for the original source file?**

method\_info (\*)

this\_class

filed\_info

cp\_info

**2. Like in the Java source code file, one Java class file can contain multiple class definitions.**

True

False (\*)

**3. Given the following class structure:**

**public class Shape{**

**void foo(){}**

**}**

**public class Circle extends Shape{**

**void draw(){}**

**}**

**Which of the following statements is TRUE?**

The foo method definition appears in the Circle class.

The Circle class contains both the foo and draw method definitions.

The foo method definition is only contained in the Shape class. (\*)

If a Circle object is instantiated, the constructor of Circle will call the constructor of Shape.

**4. The bytecode for a Java method is located in which structure in the Java class file?**

magic

access\_flags

method\_info (\*)

major\_version

**5. In a valid Java class file, the magic number is always:**

42

CAFEBABE (\*)

1.618

BABECAFE

**6. Given the following instance variable:**

**public void foo(){**

**int i=888888;**

**}**

**Which of the following statements is NOT TRUE?**

The variable i is a local variable.

The 888888 is an integer literal. After compile, the number will stay in the constant pool.

The variable i and the literal 888888 are stored in the method\_info. (\*)

The field descriptor for the variable i is I.

**7. Which of the following commands allows a developer to see the effects of a running java application on memory and CPU?**

javac

jvisualvm (\*)

java

javap

**8. Which of the following statements is NOT TRUE for the jdb command?**

jdb can display the source code.

jdb can set the break pont for the program.

jdb can dump the stack of the current thread.

jdb can track the GC activity of the program. (\*)

**9. The javac command can be used to display native code in Java**

True

False (\*)

**10. Which of the following commands can be used to translate Java source code into bytecode?**

java

javac (\*)

jdb

jstat

**11. Which of the following commands is used to launch a java program?**

javac

jvisualvm

java (\*)

javap

**12. HotSpot has an HSDIS plugin to allow disassembly of code.**

True (\*)

False

**13. Which of the following commands can be used to monitor the Java Virtual Machine statistics?**

jstat (\*)

javap

javac

jmap

**14. The jsat tool can be used to monitor garbage collection information.**

True (\*)

False

**15. Before we can use the jsat tool we first have to use the jps tool to obtain JVM process id numbers.**

True (\*)

False

**1. The attributes\_count item indicates how many attributes are contained within a method.**

True (\*)

False

**6. Given the following declaration of the method test:**

**public static void test(String s, int i);**

**Which of the following is the descriptor of the test method in the class file?**

(java/lang/String;int)V

(Ljava/lang/String;I)V (\*)

V(Ljava/lang/String;I)

(Ljava/lang/String;java.lang.Integer)V

**7. Given the following information in the jdb tool, jdb paused at line 11:**

**9 public static void method1(){**

**10 x=100;**

**11 }**

**public static void method1();**

**Code:**

**0: bipush 100**

**2: putstatic #7 //Field x:I**

**5: return**

**Which statement is true?**

Step completed: "thread-main", Example.method1(), line=11 bci=5

The line=11 means the jdb executed line 11 bytecode in the method1 method.

The bci=5 means the jdb executed the last bytecode instruction in the method1 method. (\*)

The bci=5 means the jdb executed 5 lines of the source code.

From the bytecode, we can assume the Variable x is an instance variable.

**8. Before we can use the jsat tool we first have to use the jps tool to obtain JVM process id numbers.**

True (\*)

False

**12. Which of the following statements is NOT TRUE for the jdb command?**

jdb can display the source code.

jdb can set the break pont for the program.

jdb can dump the stack of the current thread.

jdb can track the GC activity of the program. (\*)

**15. Which of the following commands allows a developer to see the effects of a running java application on memory and CPU?**

javac

jvisualvm (\*)

java

javap

**Section 9**

**1. Which of the following is NOT TRUE about Java?**

The JVM offers a secure environment to run a Java application

Bytecode is not portable, and needs to be compiled again in order to run on a different platform. (\*)

The JVM can interpret bytecode.

Once Java source code is compiled, it converts to bytecode.

**2. To inspect bytecode, which option is used with the javap command to disassemble the class file?**

-a

-b

-c (\*)

-d

**3. Java bytecode is generated by the javac command.**

True (\*)

False

**4. Which of the following opcode instructions would add 2 integer variables?**

add

+

addi

iadd (\*)

**5. opcode invokespecial is used to invoke an instance initialization method.**

True (\*)

False

**6. Choose which opcode is used to fetch a field from object.**

istore

idc

pop

bipush

getfield (\*)

**7. .class files are loaded into memory all at once, when a Java application is launched.**

True

False (\*)

**8. The System or Application ClassLoader loads Java classes from the System Classpath. This classpath is set by the CLASSPATH environment variable.**

True

False (\*)

**9. In the ClassLoader hierarchy, which of the following is the only class loader that does NOT have a parent?**

custom class loader

application class loader

bootstrap class loader (\*)

extension class loader

**10. Which of the following is NOT a java class loader?**

verification class loader (\*)

application class loader

bootstrap class loader

extension class loader

**11. The process of linking involves which of the following processes?**

verification

preparation

resolution

All of the above (\*)

**12. Which of the following statements is NOT TRUE for the Class.forName("HelloClass") method? (Choose three)**

public class Foo{

public void test(){

Class.forName("HelloClass");

}

}

(Choose all correct answers)

The forName() method does not initialize the HelloClass. (\*)

The forName() method returns the Class object associated with the HelloClass.

The forName() method does not load the HelloClas class into the Java Runtime. (\*)

In this example, the Class.forName("HelloClass") will use the ClassLoader which loads the Foo class.

The forName method will instantiate a HelloClass object. (\*)

**13. The Java developer can define a number of additional or custom classloaders.**

True (\*)

False

**14. The same class cannot be loaded by the JVM more than one time.**

True (\*)

False

**15. Which of the following exceptions is thrown by the loadClass() method of ClassLoader class?**

IOException

SystemException

ClassFormatError

ClassNotFoundException (\*)

**3. Which of the following from ClassLoader will load the rt.jar, the Java core clsses which are present in the java.\* package?**

Extension Class Loader

Custom Class Loader

Bootstrap Class Loader (\*)

Application Class Loader

**4. Which of the following is NOT a java class loader?**

verification class loader (\*)

application class loader

bootstrap class loader

extension class loader

**5. The same class cannot be loaded by the JVM more than one time.**

True (\*)

False

**11. Choose which opcode is used to load an int from the local variable to the operand stack.**

aload

iload (\*)

iaload

iconst

**12. Bytecode contains different opcodes for every type of loop written in source code.**

True

False (\*)

**13. Bytecode is an intermediate representation of a program, somewhere between source code and machine code.**

True (\*)

False