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Sun Certified Java Associate

- more than 200 sample certification questions for the SCJA exam -

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SCJA.de ebook

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Questions

Section 1

Fundamental Object-Oriented Concepts

Question 1-1

Select the correct setter and getter method for the property `limit` according to the JavaBeans convention!

```
public class PropertyCheck {  
    private int limit;  
}
```

Select all correct answers:

- ☐ a. `public void setLimit(int limit) { this.limit=limit; }`
 - ☐ b. `public int setLimit(int limit) { return this.limit; }`
 - ☐ c. `public void getLimit(int limit) { this.limit=limit; }`
 - ☐ d. `public int getLimit() { return this.limit; }`
 - ☐ e. `public int setLimit() { return this.limit; }`
-

Question 1-2

Which of the following statements are true?

Select all correct answers:

- ☐ a. A class can extend more than one class
 - ☐ b. A class can implement more than one interface
 - ☐ c. An interface can extend more than one interface
 - ☐ d. An interface can implement more than one interface
-

Question 1-3

Which of the following primitives are known as the floating point datatypes?

Select all correct answers:

- ☐ a. `int`
 - ☐ b. `short`
 - ☐ c. `double`
 - ☐ d. `float`
 - ☐ e. `char`
-

Question 1-4

A subclass and his superclass have an „is-a“ realtionship?

Select the correct answer:

- ☐ a. The statement is true
- ☐ b. The statement is false

Question 1-5

A book has one or more pages. Which of the following concepts characterize it best?

Select the correct answer:

- ☐ a. Inheritance
 - ☐ b. Composition
 - ☐ c. Association
 - ☐ d. Specialization
-

Question 1-6

A subclass is usually more specific than its superclass.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 1-7

Which of the following statements are true ?

Select all correct answers:

- ☐ a. Java has eight primitive datatypes
 - ☐ b. `java.lang.Object` is a primitive datatype
 - ☐ c. `Integer`, `Long`, `Double` are primitive datatypes
 - ☐ d. `int`, `long`, `double` are primitive datatypes
-

Question 1-8

Which of the following datatypes are primitive datatypes?

Select all correct answers:

- ☐ a. `int`
 - ☐ b. `float`
 - ☐ c. `long`
 - ☐ d. `Character`
 - ☐ e. `Double`
 - ☐ f. `String`
-

Question 1-9

Which of the following primitives are known as integer datatypes?

Select all correct answers:

- ☐ a. float
 - ☐ b. long
 - ☐ c. short
 - ☐ d. double
 - ☐ e. int
-

Question 1-10

With which of the following values can a `boolean` primitive be initialized?

Select all correct answers:

- ☐ a. true
 - ☐ b. false
 - ☐ c. null
 - ☐ d. 0
 - ☐ e. -1
-

Question 1-11

Which of the following statements about enumeration types are true?

Select all correct answers:

- ☐ a. The enumeration types were introduced in Java 5.0
 - ☐ b. The enumeration types should replace the Java collections framework
 - ☐ c. An enumeration type specifies a list of constant values
 - ☐ d. An enumeration type is usually implemented as a `java.util.List`
-

Question 1-12

Which of the following classes is the wrapper class for the primitive datatype `int`?

Select the correct answer:

- ☐ a. `java.util.Integer`
 - ☐ b. `java.util.Int`
 - ☐ c. `java.lang.Integer`
 - ☐ d. `java.lang.Int`
-

Question 1-13

"Multiple Inheritance" is one of the key concepts of the Java programming language.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 1-14

Which of the following statements are true?

Select all correct answers:

- ☐ a. Every Java class implements `java.lang.Interface`
 - ☐ b. Every Java class extends `java.lang.Object`
 - ☐ c. Every Java class extends `java.lang.Object` and implements `java.lang.Interface`
-

Question 1-15

Which of the following statements are true?

Select all correct answers:

- ☐ a. An abstract class cannot be instantiated
 - ☐ b. A concrete class cannot be instantiated
 - ☐ c. An interface cannot be instantiated
-

Question 1-16

Protecting instance variables by making them private is known as which of the following concepts?

Select the correct answer:

- ☐ a. data inheritance
 - ☐ b. data implementation
 - ☐ c. data encapsulation
 - ☐ d. data privating
-

Question 1-17

Which of the following getters can be used for a `boolean` primitive named `obsolete` according to the JavaBeans convention?

Select the correct answer:

- ☐ a. `boolean is(boolean obsolete) {return obsolete;}`
 - ☐ b. `boolean isObsolete() {return obsolete;}`
 - ☐ c. `boolean getobsolete(boolean obsolete)`
-

Question 1-18

What should be done to the following class to fulfill the JavaBeans specification?

```
public class Person {  
    private String name;  
  
    public String getName() {  
        return this.name;  
    }  
}
```

Select all correct answers:

- ☐ a. add the constructor `public Person(String name){}`
 - ☐ b. add a setter for `name`
 - ☐ c. implement `java.io.Serializable`
 - ☐ d. extend `java.io.Serializable`
-

Question 1-19

Which of the following statements about associations is true?

Select the correct answer:

- ☐ a. A one-to-one association between class `A` and class `B` is given if class `A` extends class `B`
 - ☐ b. A one-to-many association between class `A` and class `B` is given if class `A` and class `B` are in the same package
 - ☐ c. A many-to-many association between a class `A` and class `B` is given if class `A` and class `B` are in different packages
 - ☐ d. none of the above
-

Question 1-20

An association navigation between class A and class B is given if class A extends class B.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 1-21

Which of the following statements about "program to an interface" principle are true?

Select all correct answers:

- ☐ a. The "program to an interface" principle makes the code faster to compile
 - ☐ b. The "program to an interface" principle makes the code more flexible
 - ☐ c. The "program to an interface" principle does not allow the use of abstract classes
 - ☐ d. The "program to an interface" principle should never be used for GUI applications
-

Section 2

UML Representation of Object-Oriented Concepts

Question 2-1

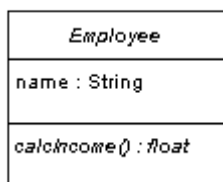
What is the representation of inheritance in a UML class diagram?

Select the correct answer:

- ☐ a. An open headed arrow pointing to the inheriting class
 - ☐ b. A closed headed arrow pointing to the inheriting class
 - ☐ c. A closed headed dashed arrow pointing to the parent class
 - ☐ d. A closed headed arrow pointing to the parent class
-

Question 2-2

Which of the following statements are true?



Select all correct answers:

- ☐ a. *Employee* is an interface.
 - ☐ b. *Employee* is an abstract class
 - ☐ c. The method `calcIncome()` is abstract
 - ☐ d. *Employee* is a non-abstract class
 - ☐ e. The method `calcIncome()` is non-abstract
-

Question 2-3

Which of the following statements is true?

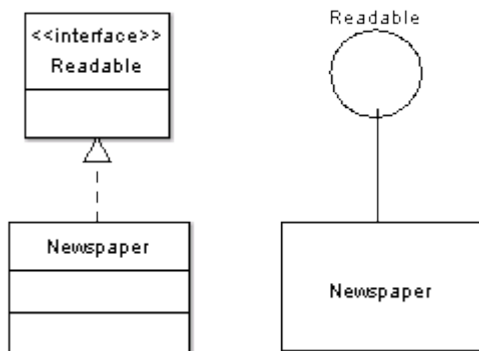


Select the correct answer:

- ☐ a. Class association is represented
 - ☐ b. Inheritance is represented
 - ☐ c. Implementation is represented
 - ☐ d. Class composition is represented
-

Question 2-4

The UML diagrams shown below are equivalent.



Select the correct answer:

- ☐ a. The statement is true
- ☐ b. The statement is false

Question 2-5

What is the association multiplicity indicator for "zero or more" in UML notation?

Select the correct answer:

- ☐ a. 0->*
- ☐ b. *..0
- ☐ c. 0..*
- ☐ d. 0->more

Question 2-6

Which identifier marks private instance variables and methods in a UML class diagram?

Select the correct answer:

- ☐ a. +
- ☐ b. *
- ☐ c. -
- ☐ d. #

Question 2-7

Which of the following statements about a class in a UML class diagram are true?

Select all correct answers:

- ☐ a. A class is represented by a circle
 - ☐ b. A class is represented by a rectangle
 - ☐ c. A class is separated in 2 sections
 - ☐ d. A class is separated in 3 sections
-

Question 2-8

A class in a UML class diagram has the three sections class name, attributes and operations.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 2-9

Which of the following statements about a class in a UML class diagram is true?

Select the correct answer:

- ☐ a. The name of the class is in the first section
 - ☐ b. The name of the class is in the second section
 - ☐ c. The name of the class is in the third section
-

Question 2-10

How is an object represented in a UML object diagram?

Select the correct answer:

- ☐ a. The first section contains the class name followed by a colon and then the object name
 - ☐ b. The first section contains the object name followed by a colon and then the class name
 - ☐ c. The first section contains the object name followed by a hyphen and then the class name
 - ☐ d. The first section contains the class name followed by a hyphen and then the object name
-

Question 2-11

You always have to list the operations of a class in an object diagram for each single object.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 2-12

An abstract class in a UML class diagram has the two sections class name and attributes.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 2-13

Which of the following statements about composition in a UML diagram is true?

Select the correct answer:

- ☐ a. A composition is represented by a non filled diamond at the one end of the association
 - ☐ b. A composition is represented by a filled diamond at the one end of the association
 - ☐ c. A composition is represented without a diamond
-

Question 2-14

What is the representation of a multiplicity indicator for a range from 1 to 10.

Select the correct answer:

- ☐ a. 1-10
 - ☐ b. *-10
 - ☐ c. 1,1:10-10
 - ☐ d. 10:1
 - ☐ e. 1..10
-

Question 2-15

A composition is a special kind of association.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 2-16

Which of the following statements about multiplicity indicators are true?

Select all correct answers:

- ☐ a. The multiplicity indicator * stands for “one or more”
 - ☐ b. The multiplicity indicator 1 stands for “one”
 - ☐ c. The multiplicity indicator 0..1 stands for “zero or one”
-

Question 2-17

Which of the following statements about abstract classes in a UML class diagram are true?

Select all correct answers:

- ☐ a. The name of the class is written with an underline
 - ☐ b. The name of the class is written in italics
 - ☐ c. The name of the class is written in capital letters
-

Question 2-18

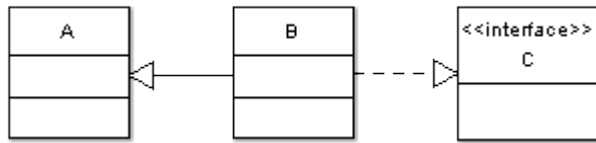
Which of the following statements about abstract classes, their operations and attributes in a UML class diagram are true?

Select all correct answers:

- ☐ a. All operations are written in italics
 - ☐ b. All operations are written with an underline
 - ☐ c. The attributes are written in italics
 - ☐ d. The attributes are written with an underline
 - ☐ e. None of the above
-

Question 2-19

Which of the following declarations is represented within the UML diagram?

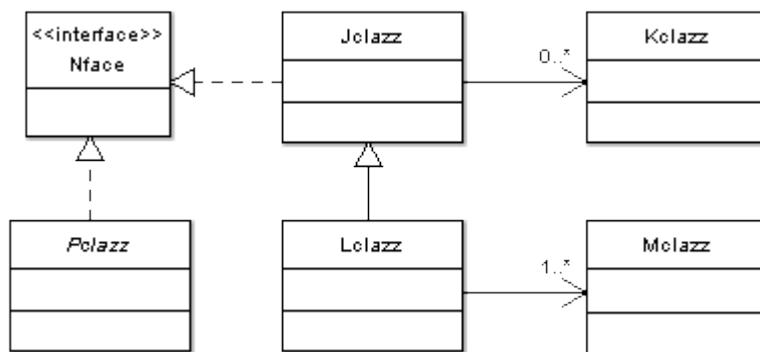


Select the correct answer:

- ☐ a. class B extends C implements A {}
- ☐ b. class B implements C extends A {}
- ☐ c. class B extends A implements C {}
- ☐ d. class B extends C,A {}
- ☐ e. The UML diagram is invalid

Question 2-20

Which of the following statements about the UML diagram is true?

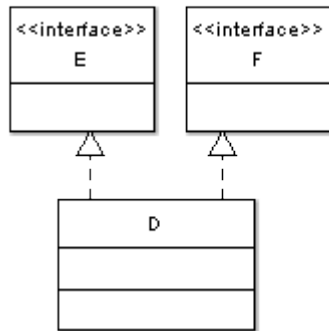


Select the correct answer:

- ☐ a. Jclazz must have a Kclazz
- ☐ b. Jclazz can have a Kclazz
- ☐ c. Kclazz must have a Jclazz
- ☐ d. Kclazz can have a Jclazz

Question 2-21

Which of the following declarations is represented within the UML diagram?



Select the correct answer:

- ☐ a. class D implements E implements F {}
- ☐ b. class D implements E, F {}
- ☐ c. class D extends E, F {}
- ☐ d. The UML diagram is invalid

Question 2-22

Which of the following declarations is represented within the UML diagram?



Select the correct answer:

- ☐ a. class G extends H, I {}
- ☐ b. interface G implements H, I {}
- ☐ c. class G implements H, I {}
- ☐ d. interface G extends H, I {}
- ☐ e. The UML diagram is invalid

Question 2-23

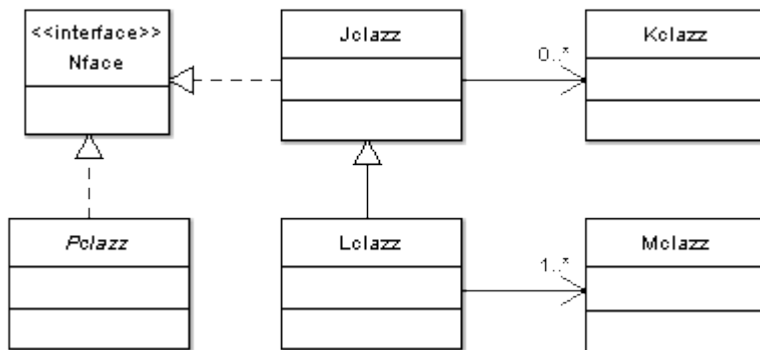
A unidirectional association is indicated with an open arrow at one and only one end of the association in a UML class diagram.

Select the correct answer:

- ☐ a. The statement is true
- ☐ b. The statement is false

Question 2-24

Which of the following statements about the UML diagram are true?

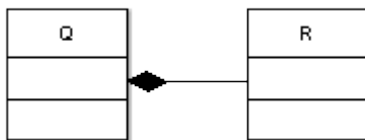


Select all correct answers:

- ☐ a. **Pclazz** is an abstract class
- ☐ b. **Pclazz** extends **Nface**
- ☐ c. **Jclazz** has an association with **Kclazz**
- ☐ d. **Jclazz** implements **Nface**

Question 2-25

The following UML diagram shows a composition.



Select the correct answer:

- ☐ a. The statement is true
- ☐ b. The statement is false

Question 2-26

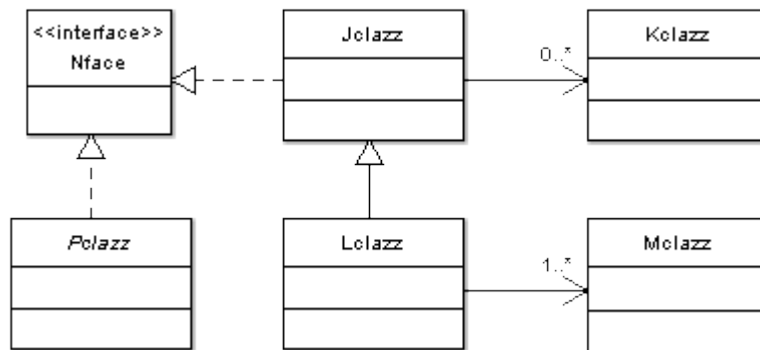
Which of the following statements about roles in a UML class diagram are true?

Select all correct answers:

- ☐ a. Roles are only added to compositions
- ☐ b. Roles are added to operations
- ☐ c. Roles are used to clarify a diagram
- ☐ d. Roles are added to associations
- ☐ e. Roles are added to attributes

Question 2-27

Which of the following code snippets are valid based on the UML diagram?

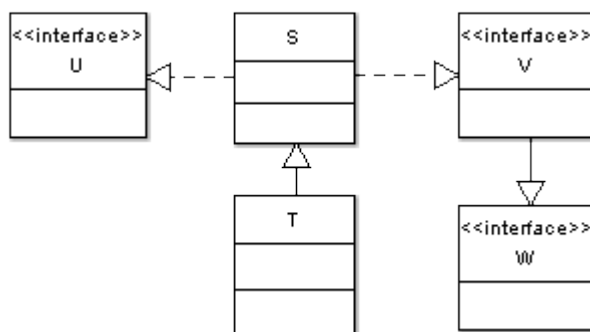


Select all correct answers:

- ☐ a. `Nface nface = new Jclazz();`
- ☐ b. `Nface nface = new Pclazz();`
- ☐ c. `Nface nface = new Lclazz();`
- ☐ d. `Lclazz lclazz = new Jclazz();`
- ☐ e. `Jclazz jclazz = new Lclazz();`

Question 2-28

Which of the following statements about the relationships in the UML diagram are true?



Select all correct answers:

- ☐ a. T "is a" S
- ☐ b. S "is a" T
- ☐ c. T "is a" V
- ☐ d. T "is a" U
- ☐ e. S "is a" W
- ☐ f. The UML diagram is invalid

Question 2-29

Which of the following statements about the notation of the `House` class in a UML class diagram are true?

```
public class House {  
    private String number;  
    public String getNumber() {  
        return number;  
    }  
}
```

Select all correct answers:

- ☐ a. The method `getNumber()` is marked with a # indicating it is public
 - ☐ b. The method `getNumber()` is marked with a + indicating it is public
 - ☐ c. The instance variable `number` is marked with a - indicating it is private
 - ☐ d. The instance variable `number` is marked with a * indicating it is private
-

Question 2-30

Which of the following statements about the notation of the `CommonBuilding` class in a UML class diagram are true?

```
public abstract class CommonBuilding {  
    private String nr;  
    public abstract String calculatePlace();  
    public String getNr() { return this.nr; }  
}
```

Select all correct answers:

- ☐ a. The method `getNr()` is written in italics
 - ☐ b. The method `getNr()` is written in bold
 - ☐ c. The method `calculatePlace` is written in italics
 - ☐ d. The method `calculatePlace` is written in bold
 - ☐ e. The class name is marked with a + indicating it is public
 - ☐ f. The class name is written in italics
-

Section 3

Java Implementation of Object-Oriented Concepts

Question 3-1

Which of the given code fragments will compile without errors?

Select all correct answers:

- ☐ a. float f=3.5;
 - ☐ b. double d=3.5;
 - ☐ c. int i=10;
 - ☐ d. int e,f=10;
 - ☐ e. char c = "C";
-

Question 3-2

What will be the result of compiling and running the following code?

```
public class CompileCheck {
    abstract class Employee {
        String name;
        public abstract float calcIncome();
    }

    class Manager extends Employee {
        public void hire(String who) {
            System.out.println( who + " hired by " + name );
        }

        public void fire(String who) {
            System.out.println( who + " fired by " + name );
        }
    }

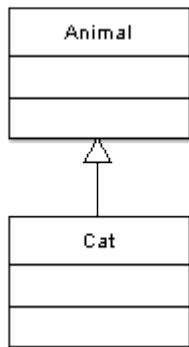
    public class ManagerCheck {
        public static void main(String args[]) {
            Manager me = new Manager();
            me.hire("newbie");
            me.fire("nobody");
        }
    }
}
```

Select the correct answer:

- ☐ a. who hired by name **and** who fired by name
 - ☐ b. newbie hired by name **and** nobody fired by name
 - ☐ c. newbie hired by null **and** nobody fired by null
 - ☐ d. Compilation fails
-

Question 3-3

According to the UML diagram - what is the correct Java representation of `Animal` and `Cat`?



Select the correct answers:

- ☐ a. `class Cat implements Animal { }`
 - ☐ b. `class Animal extends Cat { }`
 - ☐ c. `class Animal implements Cat { }`
 - ☐ d. `class Cat extends Animal { }`
 - ☐ e. The UML diagram is invalid
-

Question 3-4

Methods defined in a Java interface are `public` and `abstract` by default.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 3-5

Which of the following statements about abstract classes in Java are true?

Select all correct answers:

- ☐ a. A class must be declared abstract if one or more methods are abstract
 - ☐ b. A class can be declared abstract if one or more methods are abstract
 - ☐ c. A class can be declared abstract without abstract methods
 - ☐ d. An abstract class cannot be instantiated
-

Question 3-6

Which of the given code fragments will compile without errors?

Select all correct answers:

- ☐ a. `char c = "c";`
 - ☐ b. `char c = 'c';`
 - ☐ c. `int do = 10;`
 - ☐ d. `int i = 10L;`
-

Question 3-7

Which of the given code fragments will compile without errors?

Select all correct answers:

- ☐ a. `int i == 0;`
 - ☐ b. `long l == 0;`
 - ☐ c. `double d == 0;`
 - ☐ d. none of the above
-

Question 3-8

Which of the given code fragments will compile without errors?

Select all correct answers:

- ☐ a. `Integer i1 = new Integer(10);`
 - ☐ b. `Integer i2 = 10;`
 - ☐ c. `Int i3 = new Integer(10);`
 - ☐ d. `int i4 = 10;`
-

Question 3-9

Which of the given code fragments will compile without errors?

Select all correct answers:

- ☐ a. `int i,j,k; i=j=k=10;`
 - ☐ b. `int i; int j; int k=10;`
 - ☐ c. `int i; int j=10, int k=10;`
 - ☐ d. `int i=10; int j=10; int k=10;`
-

Question 3-10

Which of the following `enum` declarations are valid?

Select all correct answers:

- ☐ a. `enum Color { RED, BLUE, YELLOW }`
 - ☐ b. `enum Color { RED, BLUE, YELLOW } ;`
 - ☐ c. `public enum Color { RED, BLUE, YELLOW } ;`
 - ☐ d. `private enum Color { RED, BLUE, YELLOW }`
-

Question 3-11

Which of the following statements about enums are true?

Select all correct answers:

- ☐ a. An `enum` constructor can be invoked directly
 - ☐ b. An `enum` can only have one constructor
 - ☐ c. An `enum` constructor can only have one argument
 - ☐ d. An `enum` constructor can be overloaded
-

Question 3-12

What will be the result of compiling and running the following code?

```
enum Rating { EASY, MEDIUM, HARD };

class MockExam {
    Rating rating;
}

public class EnumRating {
    public static void main(String args[]) {
        MockExam mock = new MockExam();
        mock.rating = HARD;
        System.out.println(mock.rating);
    }
}
```

Select the correct answer:

- ☐ a. 0
 - ☐ b. 1
 - ☐ c. HARD
 - ☐ d. `Rating.HARD`
 - ☐ e. Compilation fails
-

Question 3-13

Which line of code placed at "// place line of code here" will allow successful compilation?

```
class Drink {
    Taste taste;

    enum Taste { GOOD, BAD }
}

public class DrinkTest {
    public static void main(String args[]) {
        Drink drink = new Drink();
        // place line of code here
    }
}
```

Select the correct answer:

- ☐ a. drink.taste = Taste.GOOD;
 - ☐ b. drink.taste = Drink.Taste.BAD;
 - ☐ c. drink.taste = GOOD;
-

Question 3-14

A subclass can directly access private instance variables of its parent class with the dot notation.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 3-15

Which of the following statements about relationships in Java are true?

Select all correct answers:

- ☐ a. The keyword `volatile` represents a has-a relationship
 - ☐ b. The keyword `extends` represents an is-a relationship
 - ☐ c. The keyword `implements` represents an is-a relationship
 - ☐ d. The keyword `transient` represents a has-a relationship
-

Question 3-16

Which of the following statements about the `Concrete` class are true?

```
public class Concrete {  
    private String name;  
    Concrete(String name) {  
        this.name = name;  
    }  
}
```

Select all correct answers:

- ☐ a. The `Concrete` class has an instance variable called `name`
 - ☐ b. The `Concrete` class has a default constructor
 - ☐ c. The `Concrete` class must be declared abstract in order to compile without errors
 - ☐ d. The `Concrete` class can be instantiated with: `Concrete c = new Concrete();`
 - ☐ e. The `Concrete` class can be instantiated with: `Concrete c = new Concrete("name");`
 - ☐ f. The `Concrete` class can be instantiated with: `Concrete c = Concrete.instance("name");`
-

Question 3-17

Which of the following statements about the `AnotherConcrete` class are true?

```
public class AnotherConcrete {  
    private int age;  
    AnotherConcrete() {  
    }  
    AnotherConcrete(int age) {  
        this.age = age;  
    }  
}
```

Select all correct answers:

- ☐ a. The `AnotherConcrete` class has an instance variable called `age`
 - ☐ b. The `AnotherConcrete` class has a default constructor
 - ☐ c. The `AnotherConcrete` class has a non-default constructor
 - ☐ d. The `AnotherConcrete` class must implement `java.io.Serializable`
 - ☐ e. The `AnotherConcrete` class must be declared private
-

Question 3-18

Which of the following statements about the classes C and D are true?

```
class C {  
    C(String s) {}  
}  
  
class D extends C {  
    D() {}  
}
```

Select all correct answers:

- ☐ a. Compilation succeeds without changes
- ☐ b. Compilation succeeds when adding the constructor `D(String s){}` to class D
- ☐ c. Compilation succeeds when adding the default constructor `C(){} to class C`
- ☐ d. Compilation succeeds when replacing the `D(){} with D() { super(""); } in class D`
- ☐ e. Compilation succeeds when replacing the `C(String s){} with C() { super(); } in class C`

Question 3-19

What will be the result of compiling and running the following code?

```
class SuperClass {  
    public void invokeMethod() {  
        System.out.println("SuperClass");  
    }  
}  
  
class SubClass extends SuperClass {  
    public void invokeMethod() {  
        System.out.println("SubClass");  
    }  
}  
  
public class TestClass {  
    public static void main(String args[]) {  
        SuperClass clazz = new SubClass();  
        clazz.invokeMethod();  
    }  
}
```

Select the correct answer:

- ☐ a. SuperClass
- ☐ b. Subclass
- ☐ c. SubClass SuperClass
- ☐ d. Compilation fails

Question 3-20

The following code compiles without error.

```
public class CompErr {  
    public String name;  
    CompErr() {  
    }  
    public void getName() {  
        return name;  
    }  
    private int hour;  
}
```

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 3-21

Which of the following statements about the class `Abs1` are true?

```
private abstract class Abs1 {  
    public String modifyConstants() {  
        return "no";  
    }  
}
```

Select all correct answers:

- ☐ a. Compilation fails because `modifyConstants()` must be declared abstract
 - ☐ b. Compilation fails because abstract classes cannot be private
 - ☐ c. Compilation fails because the return statement of the method `modifyConstants()` is incorrect
 - ☐ d. Compilation succeeds without errors
-

Question 3-22

Abstract classes were introduced in Java 5 and are not available in older versions of Java.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 3-23

Which of the following statements about the class `Abs2` are true?

```
public abstract class Abs2 {  
    public abstract long calculateTime() {  
        return 1L;  
    }  
    public void print() {  
    }  
}
```

Select all correct answers:

- ☐ a. Compilation fails because it is not allowed to mix abstract and non abstract methods in a class file
 - ☐ b. Compilation fails because the method `print()` prints nothing
 - ☐ c. Compilation fails because `calculateTime()` is declared abstract and has a method body
 - ☐ d. Compilation succeeds without errors
-

Question 3-24

What should be done to the class `Abs3` in order to compile successfully.

```
public abstract class Abs3 {  
    public int assume() {  
        return 0;  
    }  
}
```

Select the correct answer:

- ☐ a. The class should be marked as private
 - ☐ b. The class should extend `java.lang.Object`
 - ☐ c. The class should not be marked as abstract
 - ☐ d. The class should implement `java.io.Serializable`
 - ☐ e. The class compiles without changes
-

Question 3-25

A subclass can directly access public instance variables of its parent class with the dot notation.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 3-26

Which of the following statements about the classes A and B are true?

```
abstract class A {
    public abstract long summarize();
}

public class B extends A {
    long summarize() { return 1L; }
}
```

Select all correct answers:

- ☐ a. Compilation fails because the method `summarize()` in class A has no method body
- ☐ b. Compilation fails because the method `summarize()` in class B returns a `java.lang.Long` object
- ☐ c. Compilation succeeds when removing the modifier `public` of the method `summarize()` in class A
- ☐ d. Compilation succeeds when adding the modifier `public` to the method `summarize()` in class B

Question 3-27

Which of the following statements about the interface `IFaceA` are true?

```
public interface IFaceA {
    public String getName();
    int getAge();
}
```

Select all correct answers:

- ☐ a. A non abstract class implementing `IFaceA` must only implement the method `getName()`
- ☐ b. A non abstract class implementing `IFaceA` must only implement the method `getAge()`
- ☐ c. A non abstract class implementing `IFaceA` must implement the methods `getName()` and `getAge()`
- ☐ d. A non abstract class implementing `IFaceA` does not need to implement any of the methods

Question 3-28

Which of the following statements about the interface `IFace1` are true?

```
public interface IFace1 {
    String name;
    public String getName();
}
```

Select the correct answer:

- ☐ a. Compilation fails because the method `getName()` must be declared abstract
- ☐ b. Compilation fails because the method `getName()` must have a return statement
- ☐ c. Compilation fails with a reason not mentioned here
- ☐ d. Compilation succeeds

Question 3-29

Which of the following statements about the interface `Address` are true?

```
public interface Address {  
    private String name = "NAME";  
    private String city = "CITY";  
    private String country = "COUNTRY";  
}
```

Select all correct answers:

- ☐ a. Compilation fails because the private modifiers are not allowed
 - ☐ b. Compilation succeeds when the private modifiers are replaced with protected modifiers
 - ☐ c. Compilation succeeds when the private modifiers are replaced with public modifiers
 - ☐ d. Compilation succeeds when the private modifiers are replaced with nothing
 - ☐ e. Compilation succeeds without changes
-

Question 3-30

The following code compiles without errors.

```
interface IFace1 {  
    public int calcOne();  
}  
  
interface IFace2 implements IFace1 {  
    public int calcTwo();  
}
```

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 3-31

Where are concrete method implementations, methods with a method body, allowed?

Select all correct answers:

- ☐ a. In abstract classes
 - ☐ b. In interfaces
 - ☐ c. In non abstract classes
-

Question 3-32

Which of the following statements about an interface are true?

Select all correct answers:

- ☐ a. The name of an interface must start with an 'I'
 - ☐ b. Methods in an interface must be declared `public` or without an access modifier
 - ☐ c. Methods in an interface must be declared without return types
 - ☐ d. Each method declaration must end with a semicolon
-

Question 3-33

Which line of code placed at "// place line of code here" will allow successful compilation?

```
interface Inter {
    String getString();
}

classClazz implements Inter {
    // place line of code here
}
```

Select all correct answers:

- ☐ a. `String getString() {return null;}`
 - ☐ b. `Object getString() {return null;}`
 - ☐ c. `java.lang.String getString() {return null;}`
 - ☐ d. none of the above
-

Question 3-34

Which of the following statements about the `School` and `Student` classes are true?

```
class Student {}

class School {
    private Student student[];
}
```

Select all correct answers:

- ☐ a. A `School` is associated with one `Student`
 - ☐ b. A `School` is associated with many `Students`
 - ☐ c. The `School` class implements multiplicity using an array
 - ☐ d. `student[]` is navigable through the `School` class
-

Question 3-35

What will be the result of compiling and running the following code?

```
interface UFace {
    public String CODE = "SCJP";
    public void displayContent();
}

interface TFace extends UFace {
    public String CODE = "SCJA";
    public void rateContent();
}

public class All implements TFace {
    public static void main(String args[]) {
        All a = new All();
        a.displayContent();
        System.out.print(" ");
        a.rateContent();
    }

    public void displayContent() {
        System.out.print(CODE);
    }

    public void rateContent() {
        System.out.print(CODE);
    }
}
```

Select the correct answer:

- ☐ a. SCJA SCJP
 - ☐ b. SCJP SCJP
 - ☐ c. SCJA SCJA
 - ☐ d. SCJP SCJA
 - ☐ e. Compilation fails
-

Question 3-36

A non static method can only access other non static methods or non static variables.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 3-37

Which of the following statements about the `Employee` and `Address` classes are true?

```
public class Employee implements java.io.Serializable {
    private Task task;

    public Task setTask(Task task) {
        return this.task;
    }
}
```

Select all correct answers:

- ☐ a. An `Employee` is associated with one `Task`
 - ☐ b. The `Employee` class implements multiplicity using an array
 - ☐ c. The `Employee` class must be declared abstract
 - ☐ d. `task` is navigable through the `Employee` class
-

Question 3-38

What should be done to the `Employee` class so that an association navigation for `address` is given?

```
public class Employee {
    private Address address;
}
```

Select all correct answers:

- ☐ a. Add a constructor `Employee(Address address)`
 - ☐ b. Add a getter for `address`
 - ☐ c. Implement `java.io.Serializable`
 - ☐ d. Mark `address` as `public`
-

Question 3-39

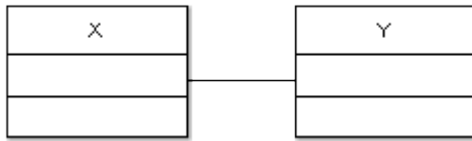
How can a static method `help()` of the utility class `CertificationUtil` be invoked?

Select all correct answers:

- ☐ a. Create an instance of `CertificationUtil` and call the `help()` method on the instance
 - ☐ b. Use `CertificationUtil->help()` to invoke the method
 - ☐ c. Use `CertificationUtil.getHelp()` to invoke the method
 - ☐ d. Use `CertificationUtil.help()` to invoke the method
-

Question 3-40

Which of the following class declarations are represented within the UML diagram?

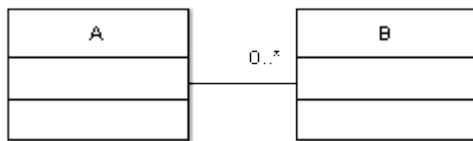


Select all correct answers:

- ☐ a. `class X { Y y; }`
 - ☐ b. `class X { Y y[]; }`
 - ☐ c. `class X extends Y { }`
 - ☐ d. `class Y extends X { }`
 - ☐ e. `class Y { X x; }`
 - ☐ f. `class Y { X x[]; }`
-

Question 3-41

Which of the following class declarations are represented within the UML diagram?



Select all correct answers:

- ☐ a. `class A { B b[]; }`
 - ☐ b. `class A { B b; }`
 - ☐ c. `class A { A a; }`
 - ☐ d. `class B { A a; }`
 - ☐ e. `class B { A a[]; }`
 - ☐ f. `class B { B b; }`
-

Question 3-42

Which of the following statements about static variables are true?

Select all correct answers:

- ☐ a. Changing the value of a static variable is not possible
 - ☐ b. A static variable must be `private`
 - ☐ c. An interface cannot contain static variables
 - ☐ d. None of the above
-

Question 3-43

Which of the following lines of code are valid according to the class definitions?

```
class Animal {}
class Vertebrate extends Animal {}
class Mammal extends Vertebrate {}
class Reptile extends Vertebrate {}
class Cat extends Mammal {}
class Dog extends Mammal {}
class Turtle extends Reptile {}
```

Select all correct answers:

- ☐ a. Dog d = new Animal();
- ☐ b. Animal a = new Cat();
- ☐ c. Vertebrate v = new Animal();
- ☐ d. Reptile v = new Turtle();

Question 3-44

Which of the following statements is true?

```
class Animal {}
class Vertebrate extends Animal {}
class Mammal extends Vertebrate {}
class Reptile extends Vertebrate {}
class Dog extends Mammal {}

public class World {
    public static void main(String args[]) {
        Animal b = new Reptile(); // Line A
        Animal a = new Vertebrate(); // Line B
        a = new Mammal(); // Line C
        Dog d = new Dog();
        b = a; // Line D
        a = d; // Line E
    }
}
```

Select the correct answer:

- ☐ a. Compilation fails in Line A
- ☐ b. Compilation fails in Line B
- ☐ c. Compilation fails in Line C
- ☐ d. Compilation fails in Line D
- ☐ e. Compilation fails in Line E
- ☐ f. Compilation succeeds

Question 3-45

What should be done to the class `Reader` in order to use the "program to an interface" principle?

```
interface Readable { public void read(); }
class Book implements Readable { public void read() {} }
class Newspaper implements Readable { public void read() {} }

public class Reader {
    public void consume(Newspaper n) {}
    public void consume(Book b) {}
}
```

Select all correct answers:

- ☐ a. The class `Reader` should implement the `Readable` interface
 - ☐ b. The methods `consume(Newspaper n)` and `consume(Book b)` should throw a `ReadableException`
 - ☐ c. Replace the methods `consume(Newspaper n)` and `consume(Book b)` with a single method `consume(Readable r)`
 - ☐ d. Replace the methods `consume(Newspaper n)` and `consume(Book b)` with a single method `consume(Book b, Newspaper p)`
 - ☐ e. Replace the methods `consume(Newspaper n)` and `consume(Book b)` with a single method `consume(Object o)`
-

Question 3-46

Which concept is shown by the methods `pay(...)` in the following code sample?

```
class PaymentServer {
    public void pay(double amount) {}
}
class SpecialPaymentServer extends PaymentServer {
    public void pay(double amount) {}
}
```

Select the correct answer:

- ☐ a. method overriding
 - ☐ b. method overloading
 - ☐ c. method inheritance
 - ☐ d. none of the above
-

Question 3-47

Which concept is shown by the methods `pay(...)` in the following code sample?

```
public class PaymentServer {  
    public void pay(double amount) {}  
    public void pay(double amount, String currency) {}  
    public void pay(double amount, String currency, String ) {}  
}
```

Select the correct answer:

- ☐ a. method overriding
 - ☐ b. method overloading
 - ☐ c. method inheritance
 - ☐ d. method doubling
-

Question 3-48

Which concept is shown by the methods `pay(...)` in the following code sample?

```
class PaymentServer {  
    public void pay(double amount) {  
    }  
}  
class SpecialPaymentServer extends PaymentServer {  
    public void pay(double amount, String currency) {}  
}
```

Select the correct answer:

- ☐ a. method overriding
 - ☐ b. method overloading
 - ☐ c. method doubling
 - ☐ d. method inheritance
 - ☐ e. none of the above
-

Question 3-49

What is the meaning of method overloading?

Select the correct answer:

- ☐ a. Multiple methods exist with a different name but same argument list
 - ☐ b. Multiple methods exist with a different name and different argument list
 - ☐ c. Multiple methods exist with the same name but a different argument list
 - ☐ d. Multiple methods exist with the same name and same argument list
-

Section 4

Algorithm Design and Implementation

Question 4-1

What will be the result of compiling and running the following code?

```
public class StringCheck {  
    public static void main(String args[]) {  
        String s = "SCJA    ";  
        s.trim();  
        s = s + "Exam";  
        System.out.println(s);  
    }  
}
```

Select the correct answer:

- ☐ a. SCJA Exam
 - ☐ b. SCJA Exam
 - ☐ c. SCJAExam
 - ☐ d. Compilation fails
-

Question 4-2

What will be the result of compiling and running the following code?

```
public class LoopCheck {  
    public static void main(String args[]) {  
        int i = 0;  
        int x = 10;  
        while ( x > 6 ) {  
            System.out.print(++i + " ");  
            x--;  
        }  
    }  
}
```

Select the correct answer:

- ☐ a. 1 2 3 4 5
 - ☐ b. 0 1 2 3 4
 - ☐ c. 1 2 3 4
 - ☐ d. 0 1 2 3
 - ☐ e. 0 1 2 3 4
-

Question 4-3

Which of the following code fragments are valid iteration statements?

Select all correct answers:

- ☐ a. `for (int i=0; i<10;i++) {}`
 - ☐ b. `for (; ;) {}`
 - ☐ c. `for (int i=0; i< 5;) {i++;}`
 - ☐ d. `for (int i=10; true; i--) {}`
-

Question 4-4

The body of a `do..while` loop is always executed more than one time.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 4-5

Which of the following statements about the `ScopeCheck` class are true?

```
public class ScopeCheck {
    private String name;
    private int    age;

    public String call(String s) {
        String text;
        return s;
    }
}
```

Select all correct answers:

- ☐ a. The variables `name` and `age` are instance variables
 - ☐ b. The variable `text` is a method parameter variable
 - ☐ c. The variable `text` is a local variable
 - ☐ d. Compilation fails because variable `text` is not initialized
-

Question 4-6

Which of the following statements about local variables are true?

Select all correct answers:

- ☐ a. Local variables can have the same name like an instance variable
 - ☐ b. Local variables are automatically initialized to default values
 - ☐ c. Local variables must be initialized before they can be used
 - ☐ d. Local variables can be marked as abstract
-

Question 4-7

An instance variable of type `java.lang.String` is automatically initialized to `null`.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 4-8

Which of the following statements about class `X` is true?

```
public class X {  
    public int calc(int i) {  
        int x;  
        return i;  
    }  
  
    public static void main(String args[]) {  
        X myX = new X();  
        myX.calc(100);  
    }  
}
```

Select the correct answer:

- ☐ a. Compilation fails because the local variable `x` is not initialized
 - ☐ b. Compilation fails because `myX` is an invalid identifier
 - ☐ c. Compilation succeeds
 - ☐ d. none of the above
-

Question 4-9

A local variable and a method parameter can have the same name as shown in the `Clazz` class.

```
public class Clazz {  
    public int calc(int x) {  
        int x;  
    }  
}
```

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 4-10

Which of the following statements about instance variables are true?

Select all correct answers:

- ☐ a. Instance variables must start with an uppercase letter
 - ☐ b. Instance variables are automatically initialized to default values
 - ☐ c. Instance variables can have the access modifiers `private`, `protected` or `public`
-

Question 4-11

An instance variable of the primitive type `int` is automatically initialized with the value `-1`.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 4-12

Which of the following statements about instance variables of type `java.lang.Integer` is true?

Select the correct answer:

- ☐ a. An instance variable of type `java.lang.Integer` is automatically initialized to `0`
 - ☐ b. An instance variable of type `java.lang.Integer` is automatically initialized to `-1`
 - ☐ c. An instance variable of type `java.lang.Integer` is automatically initialized to `null`
 - ☐ d. An instance variable of type `java.lang.Integer` is automatically initialized to an undefined value
-

Question 4-13

What will be the result of compiling and running the following code?

```
public class Intializer {
    private int i = -1;
    private boolean b = true;
    private String s = "";

    public static void main(String args[]) {

        Intializer iz = new Intializer();
        System.out.println(iz.i + " " + iz.b + " " + iz.s);
    }
}
```

Select the correct answer:

- ☐ a. -1 true null
 - ☐ b. -1 true
 - ☐ c. 0 false null
 - ☐ d. Compilation fails
-

Question 4-14

What will be the result of compiling and running the following code?

```
public class IntializerMin {
    private int MIN = 0;
    private int i = 5;

    public static void main(String args[]) {
        Intializer iz = new Intializer();
        for ( ;iz.i > MIN; iz.i--) { System.out.print(iz.i + " "); }
    }
}
```

Select the correct answer:

- ☐ a. 5 4 3 2 1 0
 - ☐ b. 4 3 2 1 0
 - ☐ c. 5 4 3 2 1
 - ☐ d. 4 3 2 1 0 -1
 - ☐ e. Compilation fails
-

Question 4-15

Given the following algorithm for '*summarizing all even numbers in an array of integers and returning the sum*' as pseudo code. Which would be an appropriate Java implementation?

```

arr := {array of integer numbers}

sum := 0;
n:= length(arr);
for index := 0 to n-1
do
if ( (arr[index] mod 2 ) == 0 )
    sum := sum + arr[index]
fi
return sum;
od

```

Select all correct answers:

☐ a.

```

public int sum(int arr[]) {
    int sum = 0;
    for ( int index = 0; index < arr.length(); index++) {
        if ( arr[index] % 2 == 1 ) {sum = sum + arr[index];}
    }
    return sum;
}

```

☐ b.

```

public int sum(int arr[]) {
    int sum = 0;
    for ( int index = 0; index < arr.length; index++) {
        if ( arr[index] % 2 == 0 ) then {sum.add(arr[index]);}
    }
    return sum;
}

```

☐ c.

```

public int sum(int arr[]) {
    int sum = 0;
    for ( int index = 0; index < arr.length; index++) {
        if ( arr[index] % 2 == 0 ) {sum = sum + arr[index];}
    }
    return sum;
}

```

☐ d.

```

public int sum(int arr[]) {
    int sum = 0, index = 0;
    for ( ;index < arr.length; ) {
        if ( !(arr[index] % 2 == 1) ) {sum = arr[index] + sum ;}
        index++;
    }
    return sum;
}

```

Question 4-16

Given the following algorithm for '*searching the number x in the array arr of integers and returning the corresponding index*' as pseudo code. Which would be an appropriate Java implementation?

```

arr := {array of integer numbers}

index := 0;
n := length(arr)
while (index < n)
do
    if (arr[index] = x)
        then return index;
    fi
    index := index +1;
od;
return -1

```

Select all correct answers:

☐ a.

```

public int search(int arr[], int x) {
    int index=0;
    int n = arr.length;
    while ( index < n) {
        if ( arr[index] == x ) { return index; }
        index++;
    }
    return -1;
}

```

☐ b.

```

public int search(int arr[], int x) {
    int index=0;
    int n = arr.length;
    while ( index < n) {
        if ( arr[index] == x ) then return index;
        else index++;
    }
    return -1;
}

```

☐ c.

```

public int search(int arr[], int x) {
    int index=0;
    int n = arr.length();
    do while ( index < n) {
        if ( arr[x] == index ) { return x; }
        index++;
    }
    return -1;
}

```

Question 4-17

Given the following algorithm for '*returning the maximum of two integers*' as pseudo code. Which would be an appropriate Java implementation?

```
if ( x > y) then return x;  
else return y;  
fi
```

Select all correct answers:

☐ a.

```
public int max(int x,int y) {  
    if ( x > y) then {  
        return x;  
    } otherwise {  
        return y;  
    }  
}
```

☐ b.

```
public int max(int x,int y) {  
    if ( x > y) do {  
        return x;  
    } then {  
        return y;  
    }  
}
```

☐ c.

```
public int max(int x,int y) {  
    if ( x > y) {  
        return x;  
    } then {  
        return y;  
    }  
}
```

☐ d.

```
public int max(int x,int y) {  
    if ( x > y ) {  
        return x;  
    } else {  
        return y;  
    }  
}
```

Question 4-18

What will be the result of compiling and running the following code?

```
public class SwitchCheck {
    public static void main(String args[]) {
        int i = 4;
        switch (i) {
            default : System.out.print("default ");
            case 1: System.out.print("1 ");
                break;
            case 2: System.out.println("2 ");
                break;
        }
    }
}
```

Select the correct answer:

- ☐ a. 1 default
 - ☐ b. default
 - ☐ c. default 1
 - ☐ d. default 1 2
 - ☐ e. Compilation fails
-

Question 4-19

What will be the result of compiling and running the following code?

```
public class SwitchTest {
    public static void main(String args[]) {
        long number = 10;
        switch (number) {
            case 1: System.out.println("1 ");
                break;
            case 5: System.out.println("5 ");
                break;
            case 10: System.out.println("10 ");
                break;
            default : System.out.println("default" );
        }
    }
}
```

Select the correct answer:

- ☐ a. 10
 - ☐ b. 10 default
 - ☐ c. 1 5 10 default
 - ☐ d. 1 5 10
 - ☐ e. Compilation fails
-

Question 4-20

It is allowed to specify more than one case label with the same value as shown in the SwitchTwo class.

```
public class SwitchTwo {
    public static void main(String args[]) {
        int i = 2;
        switch (i) {
            case 2: System.out.print("first 2");
                    break;
            case 2: System.out.println("second 2");
                    break
        }
    }
}
```

Select the correct answer:

- ☐ a. The statement is true
☐ b. The statement is false

Question 4-21

Which of the following options are part of the output when running the following code?

```
public class ForLoop {
    public static void main(String args[]) {
        for ( int i=0; i < 3; i++) {
            for ( int j=0; j < 4; j++) {
                System.out.println(i + " " + j);
                if ( i == j ) { break;}
            }
        }
    }
}
```

Select all correct answers:

- ☐ a. 0 0
☐ b. 1 2
☐ c. 1 3
☐ d. 2 0
☐ e. 2 2

Question 4-22

Which of the following options are part of the output when running the following code?

```
public class WhileLoop {
    public static void main(String args[]) {
        int i=0;
        int j=10;
        while ( true ) {
            i++;
            System.out.println(i + " " + j );
            if ( i > j ) { break; }
            j--;
        }
    }
}
```

Select all correct answers:

- ☐ a. 3 8
 - ☐ b. 3 9
 - ☐ c. 4 7
 - ☐ d. 4 8
 - ☐ e. 5 6
 - ☐ f. 6 4
-

Question 4-23

What will be the result of compiling and running the following code?

```
public class ForEachLoop {
    public static void main(String args[]) {
        String s[] = { "SCJA ", "Mock ", " Exam " };
        for ( String elem : s[] ) {
            System.out.print(elem);
        }
    }
}
```

Select the correct answer:

- ☐ a. Exam SCJA Mock
 - ☐ b. SCJA Mock Exam
 - ☐ c. Exam Mock SCJA
 - ☐ d. Compilation fails
-

Question 4-24

What will be the result of compiling and running the following code?

```
class B {
    public int x;

    B(int x){
        this.x=x;
    }
}

public class A {
    public static void main(String args[]) {
        A call = new A();
        int x = 1;
        call.doSomething(x);
        B b = new B(1);
        call.doSomething(b);
        System.out.println(x + " " + b.x);
    }
    public void doSomething(int x) {
        x = 100;
    }
    public void doSomething(B x) {
        x.x = 100;
    }
}
```

Select the correct answer:

- ☐ a. 100 1
- ☐ b. 1 100
- ☐ c. 1 1
- ☐ d. 100 100
- ☐ e. Compilation fails

Question 4-25

What will be the result of compiling and running the following code?

```
class D {
    public int x;

    D(int x) {
        this.x=x;
    }
}

public class C {
    public static void main(String args[]) {
        C call = new C();
        Integer x = 1;
        call.doSomething(x);
        D d = new D(1);
        call.doSomething(d);
        System.out.println(x + " " + d.x);
    }
    public void doSomething(Integer x) {
        x = 100;
    }
    public void doSomething(D x) {
        x.x = 100;
    }
}
```

Select the correct answer:

- ☐ a. 100 1
- ☐ b. 1 100
- ☐ c. 1 1
- ☐ d. 100 100
- ☐ e. Compilation fails

Question 4-26

Which of the following options are valid operators?

Select all correct answers:

- ☐ a. =>
- ☐ b. +=
- ☐ c. & |
- ☐ d. =!
- ☐ e. ||

Question 4-27

What will be the result of compiling and running the following code?

```
public class Operators {
    public static void main(String args[]) {
        System.out.print(!(true && false || true) + " ");
        System.out.print(!(true || false && true) + " ");
        System.out.print(!(true && true || false) + " ");
        System.out.print(!(true && true || true) + " ");
        System.out.print(!(true || true && true) + " ");
    }
}
```

Select the correct answer:

- ☐ a. true true true true true
- ☐ b. false false false false false
- ☐ c. true true false true false
- ☐ d. false false true true false
- ☐ e. Compilation fails

Question 4-28

Which code snippet placed at "// place code snippet here" would produce the output true?

```
public class Operators {
    public static void main(String args[]) {
        int h = 5;
        int i = 10;
        int j = 15;
        int k = 0;

        if ( // place code snippet here ) {
            System.out.println("true");
        }
    }
}
```

Select all correct answers:

- ☐ a. $h + i \neq j$
- ☐ b. $!k$
- ☐ c. $!(k > j + h)$
- ☐ d. $j - h == i$
- ☐ e. $k \geq j - i - h$

Question 4-29

Which code snippet placed at "// place code snippet here" would produce the output true?

```
public class Equality {
    public static void main(String args[]) {
        Integer x = new Integer(5);
        Long y = new Long(5);

        if ( // place code snippet here ) {
            System.out.println("true");
        }
    }
}
```

Select all correct answers:

- ☐ a. x.equals(y)
 - ☐ b. y.equals(x)
 - ☐ c. x == y
 - ☐ d. y == x
 - ☐ e. none of the above
-

Question 4-30

Which code snippet placed at "// place code snippet here" would produce the output true?

```
public class EqualityMore {
    public static void main(String args[]) {
        Integer a = new Integer(5);
        Integer b = new Integer(10);
        Integer c = new Integer(5);

        if ( // place code snippet here ) {
            System.out.println("true");
        }
    }
}
```

Select all correct answers:

- ☐ a. a.equals(b)
 - ☐ b. b.equals(b)
 - ☐ c. a.equals(c)
 - ☐ d. a == b
 - ☐ e. a == c
 - ☐ f. none of the above
-

Question 4-31

What will be the result of compiling and running the following code?

```
public class StringCharAt {  
    public static void main(String args[]) {  
        String s = "SCJA Mock Exam";  
        char ch = s.charAt(s.length() - s.indexOf("A M") );  
        System.out.println(ch);  
    }  
}
```

Select the correct answer:

- ☐ a. M
 - ☐ b. k
 - ☐ c. E
 - ☐ d. x
 - ☐ e. a
-

Question 4-32

What will be the result of compiling and running the following code?

```
public class StringLoop {  
    public static void main(String args[]) {  
        String s = "SCJA Mock Exam";  
        for ( int i=0; i<s.length; i++) {  
            System.out.print(s.charAt(i));  
        }  
    }  
}
```

Select the correct answer:

- ☐ a. SCJA Mock Exam
 - ☐ b. SCJAMockExam
 - ☐ c. maxE kcoM AJCS
 - ☐ d. Compilation fails
-

Question 4-33

Which of the following options are part of the output when running the following code?

```
public class StringWalk {
    public static void main(String args[]) {
        String s = "SCJA Mock Exam";
        for ( int i=5,j=9;;i++,j--) {
            System.out.println(s.substring(i,j));
            if ( i==j ) { break; }
        }
    }
}
```

Select the correct answer:

- ☐ a. Mock
 - ☐ b. Moc
 - ☐ c. ock
 - ☐ d. oc
 - ☐ e. o
-

Question 4-34

Which line of code placed at "// place line of code here" would produce the output true?

```
public class StringReplace {
    public static void main(String args[]) {
        String s = "SCJA Mock Exams from SCJA.de";
        s = s.replace('A','a').replace('S','s').replace('a','A');
        // place line of code here
    }
}
```

Select the correct answer:

- ☐ a. System.out.println(s.startsWith("sCJa"));
 - ☐ b. System.out.println(s.startsWith("SCJa"));
 - ☐ c. System.out.println(s.startsWith("sCJA"));
 - ☐ d. System.out.println(s.startsWith("SCJA"));
-

Question 4-35

Which of the following statements about the method `indexOf(int ch)` of the `java.lang.String` class is true?

Select the correct answer:

- ☐ a. If `ch` does not occur in the `String` the method throws a `StringIndexOutOfBoundsException`
 - ☐ b. If `ch` does not occur in the `String` the method throws a `CharacterNotFoundException`
 - ☐ c. If `ch` does not occur in the `String` the method returns `0`
 - ☐ d. If `ch` does not occur in the `String` the method returns `-1`
-

Question 4-36

What will be the result of compiling and running the following code?

```
public class StringAll {
    public static void main(String args[]) {
        String s = "  SCJA Mock Exam  ";
        s.replace('S','s');
        s.replace('C','c');
        s.trim();
        s.replace('a','A');
        s.replace('m','M');
        System.out.println(s.startsWith("scJA") + " " + s.endsWith("ExAM"));
    }
}
```

Select the correct answer:

- ☐ a. true true
 - ☐ b. true false
 - ☐ c. false true
 - ☐ d. false false
-

Section 5

Java Development Fundamentals

Question 5-1

Which of the following options will run the `PropertyCheck` class and produce the output `SCJA`?

```
public class PropertyCheck {  
    public static void main(String args[]) {  
        String myprop = System.getProperty("myprop");  
        System.out.println(myprop);  
    }  
}
```

Select the correct answer:

- ☐ a. `java -Dmyprop = SCJA PropertyCheck`
 - ☐ b. `java PropertyCheck -Dmyprop=SCJA`
 - ☐ c. `java -Dmyprop=SCJA PropertyCheck`
 - ☐ d. `java -Dmyprop=SCJA PropertyCheck`
 - ☐ e. `java -Dmyprop=SCJA PropertyCheck.class`
-

Question 5-2

Which of the following options will successfully compile the following code?

```
public class CompileCheck {  
    public static void main(String args[]) {  
        System.out.println("SCJA Exam");  
    }  
}
```

Select the correct answer:

- ☐ a. `javac CompileCheck`
 - ☐ b. `javac CompileCheck.class`
 - ☐ c. `java CompileCheck.java`
 - ☐ d. `javac CompileCheck.java`
 - ☐ e. `java CompileCheck.class`
-

Question 5-3

Which of the following classes or interfaces are provided in the `java.util` package?

Select all correct answers:

- ☐ a. `List`
 - ☐ b. `ArrayList`
 - ☐ c. `Double`
 - ☐ d. `String`
 - ☐ e. `Collections`
-

Question 5-4

All classes of the `java.lang` package are available by default and need no special import statements.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 5-5

Which of the following statements represent a correct way of an import statement at the beginning of a Java source file?

Select all correct answers:

- ☐ a. `import java.util.*;`
 - ☐ b. `import java.io;`
 - ☐ c. `import java.util.Enumeration`
 - ☐ d. `import java.net.URL;`
-

Question 5-6

Where should Java source files be organized in?

Select the correct answer:

- ☐ a. Imports
 - ☐ b. Tabs
 - ☐ c. Groups
 - ☐ d. Packages
-

Question 5-7

Which of the following statements about imports und packages are true?

Select all correct answers:

- ☐ a. When a package statement exists, it is placed after all import statements
 - ☐ b. The first line in a Java source file must always be an import statement
 - ☐ c. When a package statement exists, it is placed before all import statements
 - ☐ d. When no package statement exists, a Java source file needs at least one import statement
-

Question 5-8

Which of the following Java source files will compile?

Select the correct answer:

☐ a.

```
import java.util.Date;
package de.scja.mock.exam;
public class B {
    Date d;
}
```

☐ b.

```
package de.scja.mock.exam;
import java.util.Date;
public class A {
    Date d;
}
```

☐ c.

```
public class C {
    Date d;
}
import java.util.Date;
package de.scja.mock.exam;
```

Question 5-9

Which of the following packages provide classes for creating graphical user interfaces?

Select all correct answers:

- ☐ a. java.util
- ☐ b. java.net
- ☐ c. java.awt
- ☐ d. java.swing

Question 5-10

When importing classes using the * notation such as `java.util.*`, the source code must use five or more classes of this package otherwise the compilation fails.

Select the correct answer:

- ☐ a. The statement is true
- ☐ b. The statement is false

Question 5-11

Which of the following statements regarding the source code of `DateCheck` is true?

```
import java.util.Date;
import de.scja.Date;

public class DateCheck {
    Date d;
}
```

Select the correct answer:

- ☐ a. It is not allowed to have Java classes in different packages with the same name
 - ☐ b. The instance variable `d` is a `java.util.Date`, because the first import for `Date` is recognized.
 - ☐ c. The instance variable `d` is a `de.scja.Date`, because the last import for `Date` is recognized
 - ☐ d. Compilation fails
-

Question 5-12

Which of the following packages provides classes for serialization?

Select the correct answer:

- ☐ a. `java.util`
 - ☐ b. `javax.swing`
 - ☐ c. `java.awt`
 - ☐ d. `java.io`
-

Question 5-13

It is not allowed to use full package names as shown in the following code.

```
public class XYZ {
    java.util.Date d;
    java.lang.String s;
}
```

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 5-14

Which of the following packages provides the `FileNotFoundException`?

Select the correct answer:

- ☐ a. `java.util`
 - ☐ b. `javax.swing`
 - ☐ c. `java.awt`
 - ☐ d. `java.io`
-

Question 5-15

Which of the following packages provides classes for encoding and decoding URLs?

Select the correct answer:

- ☐ a. `java.util`
 - ☐ b. `java.net`
 - ☐ c. `java.io`
-

Question 5-16

Which of the following command line options of the `java` command will print the version of the JRE?

Select the correct answer:

- ☐ a. `-ver`
 - ☐ b. `-V`
 - ☐ c. `-version`
 - ☐ d. `-ver -jre`
-

Question 5-17

Which of the following command line options of the `java` command specifies a system property named `color` with the value `blue`?

Select the correct answer:

- ☐ a. `-Dcolor.blue`
 - ☐ b. `-Dcolor->blue`
 - ☐ c. `-Dcolor-blue`
 - ☐ d. `-Dcolor==blue`
 - ☐ e. `-Dcolor=blue`
-

Question 5-18

The `java` command line option `-classpath` only accepts jar archives as its value.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 5-19

Which of the following options will compile the source file `Destination.java` and place the generated class files to `c:\devel\dist`.

Select the correct answer:

- ☐ a. `javac -dest c:\devel\dist Destination.java`
 - ☐ b. `javac -D=c:\devel\dist Destination.java`
 - ☐ c. `javac -d c:\devel\dist Destination.java`
 - ☐ d. `javac Destination.java -D c:\devel\dist`
-

Question 5-20

The directory specified with the `-d` option of the `javac` command must exist, otherwise compilation fails.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 5-21

Assuming that the directory `c:\devel\dist` exists. Where will the generated class file `Age.class` be placed when compiling the following source file `Age.java` with `javac -d c:\devel\dist Age.java`?

```
package de.scja.pack;  
public class Age {}
```

Select the correct answer:

- ☐ a. In the directory `c:\devel\dist`
 - ☐ b. In the directory `c:\devel\dist\pack\scja\de`
 - ☐ c. In the directory `c:\devel\dist\de\scja\pack`
 - ☐ d. In the directory `c:\devel\dist\age`
-

Question 5-22

Which package provides the wrapper classes for the primitive data types such as `int`, `long`, `double`?

Select the correct answer:

- ☐ a. `java.util`
 - ☐ b. `javax.swing`
 - ☐ c. `java.lang`
 - ☐ d. `java.io`
-

Question 5-23

Which of the following statements about a Java source file are true?

Select all correct answers:

- ☐ a. The first line of a java source file must be a comment line
 - ☐ b. The first line of a java source file must be an import statement
 - ☐ c. The first line of a java source file must be the package statement
 - ☐ d. The first line of a java source file must be the class definition
 - ☐ e. none of the above
-

Question 5-24

Every Java source file needs an import statement for the `java.lang` package because all classes are extended from `java.lang.Object`.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 5-25

The collections framework is provided by the `java.io` package.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Section 6

Java Platforms and Integration Technologies

Question 6-1

Which of the following statements are true?

Select all correct answers:

- ☐ a. SQL stands for Structured Query Language
 - ☐ b. JNDI stands for Java Naming and Development Interface
 - ☐ c. JMS stands for Java Message Servlet
 - ☐ d. RMI stands for Remote Method Interaction
-

Question 6-2

The RMI API is part of the Java 2 Standard Edition (J2SE)

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 6-3

Which J2EE service enables applications to look up resources bound to a directory structure?

Select the correct answer:

- ☐ a. JMS
 - ☐ b. SQL
 - ☐ c. JNDI
 - ☐ d. RDBMS
-

Question 6-4

Select the appropriate Java platform for an application that relies heavily on swing components and needs no network connectivity.

Select the correct answer:

- ☐ a. J2ME
 - ☐ b. J2EE
 - ☐ c. J2SE
-

Question 6-5

On which elements is the J2ME technology based?

Select all correct answers:

- ☐ a. integration environment
 - ☐ b. deployment
 - ☐ c. configuration
 - ☐ d. profile
 - ☐ e. validation
 - ☐ f. set of technology-specific APIs
-

Question 6-6

Which Java edition provides a JRE for running standalone desktop applications?

Select the correct answer:

- ☐ a. J2ME
 - ☐ b. J2SE
 - ☐ c. J2EE
-

Question 6-7

Which Java edition provides a runtime environment for micro devices?

Select the correct answer:

- ☐ a. J2SE
 - ☐ b. J2EE
 - ☐ c. J2ME
-

Question 6-8

Which Java edition is associated with the MIDP API?

Select the correct answer:

- ☐ a. J2ME
 - ☐ b. J2EE
 - ☐ c. J2SE
-

Question 6-9

Which Java edition is associated with the Java WebStart technology?

Select the correct answer:

- ☐ a. J2ME
 - ☐ b. J2EE
 - ☐ c. J2SE
-

Question 6-10

Which of the following statements are true?

Select all correct answers:

- ☐ a. the classes of the J2SE are available in the J2EE
 - ☐ b. the classes of the J2ME are available in the J2EE
 - ☐ c. the classes of the J2EE are available in the J2SE
 - ☐ d. the classes of the J2SE are available in the J2ME
-

Question 6-11

Which of the following statements are true?

Select all correct answers:

- ☐ a. J2SE applications can invoke J2EE components such as EJBs
 - ☐ b. J2ME applications can invoke J2EE components such as EJBs
 - ☐ c. J2EE applications can invoke J2EE components such as EJBs
-

Question 6-12

Which of the following components are developed within the J2ME?

Select all correct answers:

- ☐ a. Applets
 - ☐ b. Servlets
 - ☐ c. EJBs
 - ☐ d. MIDlets
-

Question 6-13

Which of the following components are developed within the J2EE?

Select all correct answers:

- ☐ a. Applets
 - ☐ b. Servlets
 - ☐ c. EJBs
 - ☐ d. MIDlets
-

Question 6-14

A J2ME profile defines a set of APIs available to a special type of micro devices.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 6-15

Select the appropriate Java edition for the following described application.
The application is an applet which is nested inside an HTML page.

Select the correct answer:

- ☐ a. J2ME
 - ☐ b. J2EE
 - ☐ c. J2SE
-

Question 6-16

Select the appropriate Java edition for the following described application.
The application is deployed as a JAR file on a PDA.

Select the correct answer:

- ☐ a. J2ME
 - ☐ b. J2EE
 - ☐ c. J2SE
-

Question 6-17

Select the appropriate Java edition for the following described application.
The application needs transactions and consists of JSPs, Servlets and EJBs.

Select the correct answer:

- ☐ a. J2ME
 - ☐ b. J2EE
 - ☐ c. J2SE
-

Question 6-18

Which of the following statements about J2ME configurations are true?

Select all correct answers:

- ☐ a. CDC is a J2ME configuration
 - ☐ b. CLDC is a J2ME configuration
 - ☐ c. CCDC is a J2ME configuration
 - ☐ d. CLC is a J2ME configuration
-

Question 6-19

Which of the following statements is true?

Select the correct answer:

- ☐ a. MIDP stands for Mobile Information Device Profile
 - ☐ b. MIDP stands for Mobile Information Device Protocol
 - ☐ c. MIDP stands for Mobile Integration Device Protocol
 - ☐ d. MIDP stands for Mobile Integration Device Program
-

Question 6-20

Which API is used for the connectivity with a relational database?

Select the correct answer:

- ☐ a. HTTPS
 - ☐ b. HTTP
 - ☐ c. JDBC
 - ☐ d. JMS
-

Question 6-21

Which of the following statements about the JDBC API are true?

Select all correct answers:

- ☐ a. the JDBC API is provided in the `java.sql` package
 - ☐ b. the JDBC API is provided in the `java.rdbms` package
 - ☐ c. the JDBC API is provided in the `java.jdbc` package
 - ☐ d. the JDBC API is provided in the `java.database` package
-

Question 6-22

Which of the following statements are true?

Select all correct answers:

- ☐ a. JMS supports point-to-point messaging
 - ☐ b. JMS supports the publish-subscribe model
 - ☐ c. JMS stands for Java Message Service
-

Question 6-23

Which protocols are used for accessing JSPs and Servlets?

Select all correct answers:

- ☐ a. RMI
 - ☐ b. RMI over IIOP
 - ☐ c. HTTP
 - ☐ d. HTTPS
-

Question 6-24

RMI can be used to invoke methods on objects residing in a remote JVM.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 6-25

RMI was introduced as a part of the Java 2 MicroEdition (J2ME)

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 6-26

Which of the following statements about RMI are true?

Select all correct answers:

- ☐ a. The RMI API is provided by the `java.rmi` package
 - ☐ b. RMI uses object serialization to marshal and unmarshal parameters
 - ☐ c. There is an RMI compiler named `rmic`
-

Question 6-27

Which API is used to communicate with Message Oriented Middleware (MOM)?

Select the correct answer:

- ☐ a. JMOM
 - ☐ b. JMS
 - ☐ c. JSTP
 - ☐ d. JSP
-

Question 6-28

Which of the following statements about JavaMail are true?

Select all correct answers:

- ☐ a. JavaMail provides a platform dependent framework to build mail applications
 - ☐ b. JavaMail provides a platform independent framework to build mail applications
 - ☐ c. JavaMail provides a protocol dependent framework to build mail applications
 - ☐ d. JavaMail provides a protocol independent framework to build mail applications
-

Question 6-29

Which of the following statements about MIDP are true?

Select all correct answers:

- ☐ a. The MIDP minimizes memory consumption
 - ☐ b. The MIDP offers functionality for network connectivity
 - ☐ c. The MIDP is not able to offer functionality for local data storage
 - ☐ d. The MIDP is designed for TV set-top boxes
-

Question 6-30

Which of the following statements about SQL are true?

Select all correct answers:

- ☐ a. SQL is used to look up resources bound to a directory structure
 - ☐ b. SQL is used to call EJBs
 - ☐ c. SQL is used to query databases
 - ☐ d. SQL is used to compile JSPs
-

Section 7
Client Technologies

Question 7-1

Where can JavaScript code be placed for client site scripting like input form validation?

Select all correct answers:

- ☐ a. JSP
 - ☐ b. EJB
 - ☐ c. HTML page
 - ☐ d. MIDlet
-

Question 7-2

In a J2ME context the abbreviation JAD stands for what?

Select the correct answer:

- ☐ a. Java Archive Descriptor
 - ☐ b. Java Application Descriptor
 - ☐ c. Java Assignment Description
 - ☐ d. Java Application Deployment
-

Question 7-3

Which kind of components are deployed on mobile devices like handhelds or cell phones?

Select the correct answer:

- ☐ a. Applets
 - ☐ b. MIDlets
 - ☐ c. Portlets
 - ☐ d. Servlets
-

Question 7-4

Which of the following statements about applets are true?

Select all correct answers:

- ☐ a. An Applet runs on an application server
 - ☐ b. An Applet is deployed on mobile devices
 - ☐ c. An Applet is downloaded from a webserver to the client
 - ☐ d. The client needs a JRE to start an applet
 - ☐ e. The client does not need a JRE to start an applet
-

Question 7-5

A J2EE application server is needed to run swing applications.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-6

Which of the following statements about AWT is true?

Select the correct answer:

- ☐ a. AWT stands for Abstract Windowing Toolkit
 - ☐ b. AWT stands for Agile Windows Toolkit
 - ☐ c. AWT stands for Abstract Window Time
-

Question 7-7

AWT has been a core part since Java 1.0.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-8

All Swing classes in the corresponding swing package start with a 'J' such as `Jpanel`, `JMenu` and `JList`.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-9

Which of the following statements about AWT are true?

Select all correct answers:

- ☐ a. AWT components are called lightweight components
 - ☐ b. AWT provides facilities for creating graphical user interfaces
 - ☐ c. The AWT classes are provided in the `javax.awt` package
-

Question 7-10

Which of the following statements about Swing are true?

Select all correct answers:

- ☐ a. Swing components are called lightweight components
 - ☐ b. Swing components are called heavyweight components
 - ☐ c. The Swing classes are provided in the `javax.swing` package
-

Question 7-11

The look-and-feel of a `java.awt.Button` on a Microsoft Windows System is the same as on Unix Systems.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-12

Which of the following statements about AWT components are true?

Select all correct answers:

- ☐ a. AWT components are called lightweight components because they are easy to develop
 - ☐ b. AWT components are called lightweight components because they do not use much memory
 - ☐ c. AWT components are called heavyweight components because they rely on the underlying native GUI
 - ☐ d. AWT components are called heavyweight components because they extend `java.awt.HWindow`
-

Question 7-13

Swing components ensure a better cross platform compatibility.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-14

Swing has not been a core part since Java 1.0

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-15

Which of the following statements about AWT and Swing components are true?

Select all correct answers:

- ☐ a. Mixing heavyweight and lightweight components is not allowed
 - ☐ b. AWT was introduced in Java 2 to replace Swing
 - ☐ c. Swing is based on the AWT architecture
 - ☐ d. AWT and Swing components look and act the same, but Swing components are easier to develop
-

Question 7-16

What are the benefits of Swing components?

Select all correct answers:

- ☐ a. Swing components are more consistent across platforms
 - ☐ b. Swing components have a cleaner look-and-feel integration
 - ☐ c. Swing components have a more efficient use of resources
-

Question 7-17

Which of the following components is embedded inside a web page?

Select the correct answer:

- ☐ a. MIDlet
 - ☐ b. Applet
 - ☐ c. Portlet
-

Question 7-18

What was an advantage of Applets over desktop Java applications in the early days of Applets?

Select the correct answer:

- ☐ a. Applets could easily be deployed over the web
 - ☐ b. Applets could easily access databases
 - ☐ c. Applets could easily access LDAP servers
 - ☐ d. Applets could easily run on any platform
-

Question 7-19

An Applet can be embedded inside a Java Server Page.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-20

Which of the following methods are involved in the life cycle of an AWT Applet?

Select the correct answer:

- ☐ a. `jinit`, `jstart`, `jstop`, `jdestroy`
 - ☐ b. `initApplet`, `startApplet`, `stopApplet`, `destroyApplet`
 - ☐ c. `init`, `start`, `stop`, `destroy`
 - ☐ d. `run`, `start`, `execute`, `halt`
-

Question 7-21

Which of the following statements about running an Applet are true?

Select all correct answers:

- ☐ a. An Applet needs a main method like desktop Java applications to run
 - ☐ b. An Applet can be started with the `appletviewer` application which comes with the J2SDK
 - ☐ c. An Applet needs a JAD file in order to be executed
 - ☐ d. An Applet runs on the client in a so called "sandbox"
-

Question 7-22

Swing provides a special subclass of an Applet.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-23

Which class has to be extended when writing an Applet?

Select the correct answer:

- ☐ a. `java.awt.Applet`
 - ☐ b. `javax.applet.Applet`
 - ☐ c. `java.applet.Applet`
-

Question 7-24

Applets need a special Java compiler called `javac-applet.exe`.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-25

Which of the following statements about Swing Applets are true?

Select all correct answers:

- ☐ a. Swing Applets extend `javax.swing.Applet`
 - ☐ b. Swing Applets extend `javax.swing.JApplet`
 - ☐ c. Swing Applets extend `javax.awt.JApplet`
 - ☐ d. Swing Applets define the life cycle methods `init`, `start`, `stop`, `destroy`
-

Question 7-26

Which of the following statements about Applets is true?

Select the correct answer:

- ☐ a. The applets source code is deployed on the web server
 - ☐ b. The applets source code is deployed on the application server
 - ☐ c. The applets source code is transferred to the client webbrowser
 - ☐ d. The applets source code is transferred to the sandbox of the clients webbrowser
 - ☐ e. none of the above
-

Question 7-27

MIDlet classes need to be preverified before they can be deployed.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-28

MIDlets are started on a mobile device by calling the MIDlet specific `runApplication(String args[])` method.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-29

Which of the following statements about MIDlets are true?

Select all correct answers:

- ☐ a. MIDlets belong to the J2ME
 - ☐ b. MIDlets are packaged as JAD files
 - ☐ c. MIDlets are compiled on the mobile device
 - ☐ d. MIDlets are able to store data on a mobile device
-

Question 7-30

Which of the following statements about input validation are true?

Select all correct answers:

- ☐ a. JavaScript can be used to validate user input
 - ☐ b. A Servlet can be used to validate user input
 - ☐ c. HTML can be used to validate user input
-

Question 7-31

Which of the following statements about HTML are true?

Select all correct answers:

- ☐ a. HTML is a markup language
 - ☐ b. HTML is based on XSS
 - ☐ c. HTML is used to build web pages
-

Question 7-32

HTML can be used to access the `HttpRequest` object.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 7-33

Which of the following statements about JavaScript are true?

Select all correct answers:

- ☐ a. JavaScript needs to be preverified by the JavaScript developer
 - ☐ b. JavaScript must be in a JAR file which is included in the web page
 - ☐ c. JavaScript is executed on the client-side
-

Question 7-34

Which of the following statements about JavaScript and J2EE are true?

Select all correct answers:

- ☐ a. JavaScript is executed on a J2EE Server
 - ☐ b. JavaScript can be used to interact with a J2EE server
 - ☐ c. JavaScript is part of the J2EE specification
 - ☐ d. none of the above
-

Question 7-35

JavaScript is used for handling website events such as onload, onclick and onmouseover.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Section 8

Server Technologies

Question 8-1

Choose the two kinds of entity beans found in the J2EE specification.

Select the correct answer:

- ☐ a. CMP and BMP
 - ☐ b. stateless and stateful
 - ☐ c. JMS and JNDI
 - ☐ d. pooled and nonpooled
-

Question 8-2

Clicking a hyperlink on a website triggers a POST-Request to a Servlet.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 8-3

Information about the history of viewed items for an online shop user should be kept for the whole time the user spends on the shop site. Which object is an appropriate way to store this data?

Select the correct answer:

- ☐ a. `HttpServletResponse`
 - ☐ b. `HttpServletRequest`
 - ☐ c. `HttpSession`
 - ☐ d. `EnterpriseSession`
-

Question 8-4

The terms subscriber, publisher, producer and consumer belong to which specification?

Select the correct answer:

- ☐ a. JSP
 - ☐ b. JMS
 - ☐ c. Servlet
 - ☐ d. XML
-

Question 8-5

The vendor of a J2EE Container is responsible for coding database access in a BMP entity bean.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 8-6

What is the responsibility of JSPs in an MVC architecture?

Select the correct answers:

- ☐ a. JSPs are used as the view
 - ☐ b. JSPs are used as the controller
 - ☐ c. JSPs are used as the model
-

Question 8-7

Which two objects are passed into the `doPost(...)` method of an HTTP Servlet?

Select all correct answers:

- ☐ a. `HttpServletRequest`
 - ☐ b. `HttpServletResponse`
 - ☐ c. `HttpSession`
 - ☐ d. `HttpRequest`
 - ☐ e. `HttpSession`
 - ☐ f. `HttpSession`
-

Question 8-8

What is the responsibility of Servlets in an MVC architecture?

Select the correct answers:

- ☐ a. Servlets are used as the view
 - ☐ b. Servlets are used as the controller
 - ☐ c. Servlets are used as the model
-

Question 8-9

Which of the following statement about Servlets are true?

Select all correct answers:

- ☐ a. The communication between a web client and a servlet is asynchronous
 - ☐ b. WSDL is used to describe a servlet
 - ☐ c. A Servlet is a Java component deployed on a J2EE server
 - ☐ d. A Servlet can handle GET and POST requests
-

Question 8-10

A GET-request is performed when clicking a hyperlink on a website.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 8-11

Which object contains the information which are sent from a client to a Servlet for further processing?

Select the correct answer:

- ☐ a. HttpServletResponse
 - ☐ b. HttpSession
 - ☐ c. HttpServletRequest
-

Question 8-12

What is the responsibility of JavaBeans in an MVC architecture?

Select the correct answer:

- ☐ a. JavaBeans are used as the view
 - ☐ b. JavaBeans are used as the controller
 - ☐ c. JavaBeans are used as the model
-

Question 8-13

Usually a JSP is translated into a Servlet at the first time a web client accesses the JSP.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 8-14

Is a Servlet or a JSP the better choice for a web application which should display a web page with a lot of static text and images but only a few dynamic elements?

Select the correct answer:

- ☐ a. Servlet
 - ☐ b. JSP
-

Question 8-15

Which type of an EJB reads from a message queue?

Select the correct answer:

- ☐ a. entity bean
 - ☐ b. message driven bean
 - ☐ c. stateful session bean
 - ☐ d. stateless session bean
-

Question 8-16

Which type of an EJB maps to persistent data?

Select the correct answer:

- ☐ a. stateful session bean
 - ☐ b. stateless session bean
 - ☐ c. entity bean
 - ☐ d. message driven bean
-

Question 8-17

Which type of an EJB supports asynchronous messaging?

Select the correct answer:

- ☐ a. stateful session bean
 - ☐ b. stateless session bean
 - ☐ c. entity bean
 - ☐ d. message driven bean
-

Question 8-18

A stateless session EJB is not allowed to have instance variables.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 8-19

The vendor of a J2EE container is responsible for coding database access in a CMP entity bean.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 8-20

Which of the following statements about EJBs in a J2EE architecture is true?

Select the correct answer:

- ☐ a. EJBs belong to the Client tier
 - ☐ b. EJBs belong to the Web tier
 - ☐ c. EJBs belong to the Business tier
-

Question 8-21

Which of the following statements about Servlets/JSPs in a J2EE architecture is true?

Select the correct answer:

- ☐ a. Servlets/JSPs belong to the Client tier
 - ☐ b. Servlets/JSPs belong to the Web tier
 - ☐ c. Servlets/JSPs belong to the EIS tier
-

Question 8-22

It is not allowed to mix CMP and BMP EJBs in one single J2EE project.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 8-23

Which of the following statements about Message Driven Beans (MDBs) are true?

Select all correct answers:

- ☐ a. MDBs are used to maintain client state
 - ☐ b. MDBs support synchronous interaction with a client
 - ☐ c. MDBs can contain code for accessing a database
 - ☐ d. MDBs can interact with a stateless session bean
 - ☐ e. MDBs use JavaMail as the transport layer
-

Question 8-24

Which type of EJB is the best choice when implementing a shopping cart component?

Select the correct answer:

- ☐ a. stateful session bean
 - ☐ b. stateless session bean
 - ☐ c. message driven bean
-

Question 8-25

Which type of EJB is the best choice when implementing workflow business logic of an J2EE application?

Select the correct answer:

- ☐ a. stateful session bean
 - ☐ b. stateless session bean
 - ☐ c. message driven bean
-

Question 8-26

When are EJBs a good choice for an application?

Select all correct answers:

- ☐ a. EJBs should be used when an application needs a graphical user interface
 - ☐ b. EJBs should be used when an application needs transaction management
 - ☐ c. EJBs should be used when an application needs security support
 - ☐ d. EJBs should be used when an application needs internationalization
-

Question 8-27

Which of the following statements state a benefit for CMP EJBs?

Select all correct answers:

- ☐ a. Faster development because the persistence logic is implemented by the container
 - ☐ b. Portable across different databases
 - ☐ c. Fast runtime behavior than a BMP
 - ☐ d. Vendor specific features can be used to speed up performance
-

Question 8-28

Web Services can only be used to exchange data between Java applications.

Select the correct answer:

- ☐ a. The statement is true
 - ☐ b. The statement is false
-

Question 8-29

Which of the following technologies are directly associated with Web Services?

Select all correct answers:

- ☐ a. Applets
 - ☐ b. RMI
 - ☐ c. SOAP
 - ☐ d. HTML
-

Question 8-30

Which of the following statements about Web Services are true?

Select all correct answers:

- ☐ a. A Web Service is described in a WSDL file
 - ☐ b. It is necessary for a Web Service to be connected to a database
 - ☐ c. UDDI is used to publish information about Web Services
-

Question 8-31

Which of the following statements about SOAP are true?

Select all correct answers:

- ☐ a. SOAP stands for Simple Object Access Protocol
 - ☐ b. SOAP is based on XML
 - ☐ c. SOAP is used for connecting to a database
 - ☐ d. SOAP is responsible for the security in a J2EE application
-

Question 8-32

Which API is associated with XML-based remote procedure calls over the internet?

Select the correct answer:

- ☐ a. RMX
 - ☐ b. JAX-RPC
 - ☐ c. XML-RMI
 - ☐ d. JXML-RPC
-

Question 8-33

Which of the following statements about XML are true?

Select all correct answers:

- ☐ a. XML is a human readable format
 - ☐ b. XML is a binary format and only for processors
 - ☐ c. XML is used to specify how to display the data
 - ☐ d. XML is used to identify data
-

Answers

Section 1

Fundamental Object-Oriented Concepts

Answer 1-1

a. and d. are correct.

Answer 1-2

b. and c. are correct.

Answer 1-3

c. and d. are correct.

Answer 1-4

a. is correct.

Answer 1-5

b. is correct.

Answer 1-6

a. is correct.

Answer 1-7

a. and d. are correct.

Answer 1-8

a.,b. and c. are correct.

Answer 1-9

b.,c. and e. are correct.

Answer 1-10

a. and b. are correct.

Answer 1-11

a.and c. are correct.

Answer 1-12

c. is correct.

Answer 1-13

b. is correct.

Answer 1-14

b. is correct.

Answer 1-15

a. and c. are correct.

Answer 1-16

c. is correct.

Answer 1-17

b. is correct.

Answer 1-18

b. and c. are correct.

Answer 1-19

d. is correct.

Answer 1-20

b. is correct.

Answer 1-21

b. is correct.

Section 2

UML Representation of Object-Oriented Concepts

Answer 2-1

d. is correct.

Answer 2-2

b.and c. are correct.

Answer 2-3

a. is correct.

Answer 2-4

a. is correct.

Answer 2-5

c. is correct.

Answer 2-6

c. is correct.

Answer 2-7

b.and d. are correct.

Answer 2-8

a. is correct.

Answer 2-9

a. is correct.

Answer 2-10

b. is correct.

Answer 2-11

b. is correct.

Answer 2-12

b. is correct.

Answer 2-13

b. is correct.

Answer 2-14

e. is correct.

Answer 2-15

a. is correct.

Answer 2-16

b. and c. are correct.

Answer 2-17

b. is correct.

Answer 2-18

e. is correct.

Answer 2-19

c. is correct.

Answer 2-20

b. is correct.

Answer 2-21

b. is correct.

Answer 2-22

d. is correct.

Answer 2-23

a. is correct.

Answer 2-24

a., c. and d. are correct.

Answer 2-25

a. is correct.

Answer 2-26

c. and d. are correct.

Answer 2-27

a., c. and d. are correct.

Answer 2-28

a.,c.,d. and e. are correct.

Answer 2-29

b. and c. are correct.

Answer 2-30

c. and f. are correct.

Section 3

Java Implementation of Object-Oriented Concepts

Answer 3-1

b.,c. and d. are correct.

Answer 3-2

d. is correct.

Answer 3-3

d. is correct.

Answer 3-4

a. is correct.

Answer 3-5

a.c. and d. are correct.

Answer 3-6

b. is correct.

Answer 3-7

d. is correct.

Answer 3-8

a.,b. and d. are correct.

Answer 3-9

a.,b. and d. are correct.

Answer 3-10

a.,b. and c. are correct.

Answer 3-11

d. is correct.

Answer 3-12

e. is correct.

Answer 3-13

b. is correct.

Answer 3-14

b. is correct.

Answer 3-15

b. and c. are correct.

Answer 3-16

a. and e. are correct.

Answer 3-17

a.,b. and c. are correct.

Answer 3-18

c.,d. and e. are correct.

Answer 3-19

b. is correct.

Answer 3-20

b. is correct.

Answer 3-21

b. is correct.

Answer 3-22

b. is correct.

Answer 3-23

c. is correct.

Answer 3-24

e. is correct.

Answer 3-25

a. is correct.

Answer 3-26

c. and d. are correct.

Answer 3-27

c. is correct.

Answer 3-28

c. is correct.

Answer 3-29

a.,c. and d. are correct.

Answer 3-30

b. is correct.

Answer 3-31

a. and c. are correct.

Answer 3-32

b. and d. are correct.

Answer 3-33

d. is correct.

Answer 3-34

b. and c. are correct.

Answer 3-35

c. is correct.

Answer 3-36

b. is correct.

Answer 3-37

a. is correct.

Answer 3-38

b. is correct.

Answer 3-39

a. and d. are correct.

Answer 3-40

a. and e. are correct.

Answer 3-41

a. and d. are correct.

Answer 3-42

d. is correct.

Answer 3-43

b. and d. are correct.

Answer 3-44

f. is correct.

Answer 3-45

c. is correct.

Answer 3-46

a. is correct.

Answer 3-47

b. is correct.

Answer 3-48

b. is correct.

Answer 3-49

c. is correct.

Section 4

Algorithm Design and Implementation

Answer 4-1

a. is correct.

Answer 4-2

c. is correct.

Answer 4-3

a.,b.,c. and d. are correct.

Answer 4-4

b. is correct.

Answer 4-5

a. and c. are correct.

Answer 4-6

a. and c. are correct.

Answer 4-7

a. is correct.

Answer 4-8

c. is correct.

Answer 4-9

b. is correct.

Answer 4-10

b. and c. are correct.

Answer 4-11

b. is correct.

Answer 4-12

c. is correct.

Answer 4-13

b. is correct.

Answer 4-14

e. is correct.

Answer 4-15

c. and d. are correct.

Answer 4-16

a. is correct.

Answer 4-17

d. is correct.

Answer 4-18

c. is correct.

Answer 4-19

e. is correct.

Answer 4-20

b. is correct.

Answer 4-21

a.,d. and e. are correct.

Answer 4-22

a.,c. and e. are correct.

Answer 4-23

d. is correct.

Answer 4-24

b. is correct.

Answer 4-25

b. is correct.

Answer 4-26

b. and e. are correct.

Answer 4-27

b. is correct.

Answer 4-28

c.,d. and e. are correct.

Answer 4-29

e. is correct.

Answer 4-30

b. and c. are correct.

Answer 4-31

d. is correct.

Answer 4-32

d. is correct.

Answer 4-33

a. and d. are correct.

Answer 4-34

c. is correct.

Answer 4-35

d. is correct.

Answer 4-36

d. is correct.

Section 5

Java Development Fundamentals

Answer 5-1

c. is correct.

Answer 5-2

d. is correct.

Answer 5-3

a.,b. and e. are correct.

Answer 5-4

a. is correct.

Answer 5-5

a. and d. are correct.

Answer 5-6

d. is correct.

Answer 5-7

c. is correct.

Answer 5-8

b. is correct.

Answer 5-9

c. is correct.

Answer 5-10

b. is correct.

Answer 5-11

d. is correct.

Answer 5-12

d. is correct.

Answer 5-13

b. is correct.

Answer 5-14

d. is correct.

Answer 5-15

b. is correct.

Answer 5-16

c. is correct.

Answer 5-17

e. is correct.

Answer 5-18

b. is correct.

Answer 5-19

c. is correct.

Answer 5-20

a. is correct.

Answer 5-21

c. is correct.

Answer 5-22

c. is correct.

Answer 5-23

e. is correct.

Answer 5-24

b. is correct.

Answer 5-25

b. is correct.

Section 6

Java Platforms and Integration Technologies

Answer 6-1

a. is correct.

Answer 6-2

a. is correct.

Answer 6-3

c. is correct.

Answer 6-4

c. is correct.

Answer 6-5

c.,d. and f. are correct.

Answer 6-6

b. is correct.

Answer 6-7

c. is correct.

Answer 6-8

a. is correct.

Answer 6-9

c. is correct.

Answer 6-10

a. is correct.

Answer 6-11

a.,b. and c. are correct.

Answer 6-12

d. is correct.

Answer 6-13

b. and c. are correct.

Answer 6-14

a. is correct.

Answer 6-15

c. is correct.

Answer 6-16

a. is correct.

Answer 6-17

b. is correct.

Answer 6-18

a. and b. are correct.

Answer 6-19

a. is correct.

Answer 6-20

c. is correct.

Answer 6-21

a. is correct.

Answer 6-22

a.,b. and c. are correct.

Answer 6-23

c. and d. are correct.

Answer 6-24

a. is correct.

Answer 6-25

b. is correct.

Answer 6-26

a.,b. and c. are correct.

Answer 6-27

b. is correct.

Answer 6-28

b. and d. are correct.

Answer 6-29

a. and b. are correct.

Answer 6-30

c. is correct.

Section 7

Client Technologies

Answer 7-1

a. and c. are correct.

Answer 7-2

b. is correct.

Answer 7-3

b. is correct.

Answer 7-4

c. and d. are correct.

Answer 7-5

b. is correct.

Answer 7-6

a. is correct.

Answer 7-7

a. is correct.

Answer 7-8

b. is correct.

Answer 7-9

b. is correct.

Answer 7-10

a. and c. are correct.

Answer 7-11

b. is correct.

Answer 7-12

c. is correct.

Answer 7-13

a. is correct.

Answer 7-14

a. is correct.

Answer 7-15

c. is correct.

Answer 7-16

a.,b. and c. are correct.

Answer 7-17

b. is correct.

Answer 7-18

a. is correct.

Answer 7-19

a. is correct.

Answer 7-20

c. is correct.

Answer 7-21

b. and d. are correct.

Answer 7-22

a. is correct.

Answer 7-23

c. is correct.

Answer 7-24

b. is correct.

Answer 7-25

b. and d. are correct.

Answer 7-26

e. is correct.

Answer 7-27

a. is correct.

Answer 7-28

b. is correct.

Answer 7-29

a. and d. are correct.

Answer 7-30

a. and b. are correct.

Answer 7-31

a. and c. are correct.

Answer 7-32

b. is correct.

Answer 7-33

c. is correct.

Answer 7-34

d. is correct.

Answer 7-35

a. is correct.

Section 8

Server Technologies

Answer 8-1

a. is correct.

Answer 8-2

b. is correct.

Answer 8-3

c. is correct.

Answer 8-4

b. is correct.

Answer 8-5

b. is correct.

Answer 8-6

a. is correct.

Answer 8-7

a. and b. are correct.

Answer 8-8

b. is correct.

Answer 8-9

c. and d. are correct.

Answer 8-10

a. is correct.

Answer 8-11

c. is correct.

Answer 8-12

c. is correct.

Answer 8-13

a. is correct.

Answer 8-14

b. is correct.

Answer 8-15

b. is correct.

Answer 8-16

c. is correct.

Answer 8-17

d. is correct.

Answer 8-18

b. is correct.

Answer 8-19

a. is correct.

Answer 8-20

c. is correct.

Answer 8-21

b. is correct.

Answer 8-22

b. is correct.

Answer 8-23

c. and d. are correct.

Answer 8-24

a. is correct.

Answer 8-25

b. is correct.

Answer 8-26

b. and c. are correct.

Answer 8-27

a. and b. are correct.

Answer 8-28

b. is correct.

Answer 8-29

c. is correct.

Answer 8-30

a. and c. are correct.

Answer 8-31

a. and b. are correct.

Answer 8-32

b. is correct.

Answer 8-33

a. and d. are correct.

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