Starting Out with Java Early Objects 6e (Gaddis)
Chapter 3 A First Look at Classes and Objects

TRUE/FALSE

1. An access specifier indicates how a class may be accessed.

   ANS: T

2. A method that gets a value from a class's field but does not change it is known as a mutator method.

   ANS: F

3. The term "no-arg constructor" is applied to any constructor that does not accept arguments.

   ANS: T

4. When a local variable in an instance method has the same name as an instance field, the instance field hides the local variable.

   ANS: F

5. The public access specifier for a field indicates that the field may not be accessed by statements outside the class.

   ANS: F

6. The term "default constructor" is applied to the first constructor written by the author of the class.

   ANS: F

7. A method that stores a value in a class's field or in some other way changes the value of a field is known as a mutator method.

   ANS: T

8. A constructor is a method that is automatically called when an object is created.

   ANS: T

9. The **`java.lang`** package is automatically imported into all Java programs.

   ANS: T

10. "Shadowing" is the term used to describe how the field name is hidden by the name of a local or parameter variable.

ANS: T

MULTIPLE CHOICE

1. When an object is created, the attributes associated with the object are called

   a. instance fields
   b. class instances
   c. instance methods
   d. fixed attributes

   ANS: A

2. A class's responsibilities include

   a. the things a class is responsible for knowing
   b. the things a class is responsible for doing
   c. both of these
   d. neither of these

   ANS: C

3. Data hiding (which means that critical data stored inside the object is protected from code outside the object) is accomplished in Java by

   a. using the **`public`** access specifier on the class methods
   b. using the **`private`** access specifier on the class methods
   c. using the **`private`** access specifier on the class fields
   d. using the **`private`** access specifier on the class definition

   ANS: C

4. Methods that operate on an object's fields are called

   a. instance methods
   b. instance variables
   c. private methods
   d. public methods

   ANS: A

5. A group of related classes is called a(n)

   a. archive
   b. package
   c. collection
   d. attachment

   ANS: B

6. Class objects normally have _____ that perform useful operations on their data, but primitive variables do not.

   a. fields
   b. relationships
   c. methods
   d. instances

ANS: C

7. You should not define a class that is dependent on the values of other class fields

   a. in order to keep it current
   b. because it is redundant
   c. in order to avoid having stale data
   d. because it should be defined in another class

   ANS: C

8. Using the blueprint/house analogy, you can think of a class as a blueprint that describes a house and _____ as instances of the house built from the blueprint.

   a. methods
   b. fields
   c. objects
   d. attributes

   ANS: C

9. Another term for an object of a class is a(n)

   a. access specifier
   b. instance
   c. member
   d. method

   ANS: B

10. Which symbol indicates that a member is public in a UML diagram?

    a. **-**
    b. *****
    c. **#**
    d. **+**

    ANS: D

11. Which symbol indicates that a member is private a UML diagram?

    a. **-**
    b. *****
    c. **#**
    d. **+**

    ANS: A

12. What does the following UML diagram entry mean?

    ```
    + setHeight(h : double) : void
    ```

    a. a public method with a parameter of data type **double** that does not return a value
    b. a private field called **setHeight** that is a **double** data type
    c. a private method with no parameters that returns a **double** data type
    d. a public field called **Height** that is a **double** data type

    ANS: A

13. The scope of a local variable is

    a. inside the parentheses of a method header
    b. the method in which it is defined
    c. inside the class but not inside any method
    d. the entire class

    ANS: B

14. Which of the following is not involved in identifying the classes to be used when developing an object-oriented application?

    a. Describe the problem domain.
    b. Write the code.
    c. Refine the list of nouns to include only those relevant to the problem.
    d. Identify all the nouns.

    ANS: B

15. A method

    a. may have zero or more parameters
    b. never has parameter variables
    c. must have at least two parameter variables
    d. may not have only one parameter variable

    ANS: A

16. A constructor is a method that

    a. returns an object of the class
    b. never receives any arguments
    c. performs initialization or setup operations
    d. removes the object from memory

    ANS: C

17. It is common practice in object-oriented programming to make all of a class's

    a. fields private
    b. methods private
    c. fields public
    d. fields and methods public

    ANS: A

18. UML diagrams do not contain

    a. fields
    b. methods
    c. class names
    d. object names

    ANS: D

19. For the following code, which statement is not true?

```
public class Sphere
{
```

```
        private double radius;
        public double x;
        private double y;
        private double z;
}
```

a. The **z** field is available to code written outside the **Sphere** class.
b. The **radius** field is not available to code written outside the **Sphere** class.
c. The **radius**, **x**, **y**, and **z** fields are members of the **Sphere** class.
d. The **x** field is available to code that is written outside the **Sphere** class.

ANS: A

20. For the following code, which statement is not true?

```
public class Circle
{
        private double radius;
        public double x;
        private double y;
}
```

a. The **y** field is available to code written outside the **Circle** class.
b. The **radius** field is not available to code written outside the **Circle** class.
c. The **radius**, **x**, and **y** fields are members of the **Circle** class.
d. The **x** field is available to code that is written outside the **Circle** class.

ANS: A

21. What is the following statement an example of?

```
import java.util.Scanner;
```

a. an explicit **import** statement
b. an unconditional **import** statement
c. a wildcard **import** statement
d. a conditional **import** statement

ANS: A

22. What is the following statement an example of?

```
import java.util.*;
```

a. an explicit **import** statement
b. an unconditional **import** statement
c. a wildcard **import** statement
d. a conditional **import** statement

ANS: C

23. After the header, the body of the method appears inside a set of

a. braces, **{ }**
b. parentheses, **( )**
c. brackets, **[ ]**
d. double quotes, **" "**

ANS: A

24. Which is the key word used to import a class?

    a. **`import`**
    b. **`assume`**
    c. **`use`**
    d. **`link`**

    ANS: A

25. The key word **`new`**

    a. creates a new class
    b. creates a new Java byte code file
    c. creates an object in memory
    d. creates a new variable in memory

    ANS: C

26. One or more objects may be created from a(n)

    a. field
    b. method
    c. instance
    d. class

    ANS: D

27. To indicate the data type of a variable in a UML diagram you specify

    a. the variable name followed by the data type
    b. the class name followed by the variable name followed by the data type
    c. the variable name followed by a colon and the data type
    d. the data type followed by the variable name

    ANS: C

28. A constructor

    a. always accepts two arguments
    b. has the same name as the class
    c. has the return type of **`void`**
    d. always has a private access specifier

    ANS: B

29. When an argument is passed by value

    a. the parameter variable holds the address of the argument
    b. the parameter variable cannot be changed
    c. the parameter variable holds a copy of the value passed to it
    d. changes can be made to the argument variable

    ANS: A

30. If you do not provide initialization values for a class's numeric fields, they will

    a. cause a runtime error

b. contain an unknown value
c. be automatically initialized to `0`
d. cause a compiler error

ANS: C