

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) _____ represents an entity in the real world that can be distinctly identified. 1) _____
A) An object B) A method C) A class D) A data field
- 2) _____ is a construct that defines objects of the same type. 2) _____
A) An object B) A data field C) A class D) A method
- 3) An object is an instance of a _____. 3) _____
A) program B) method C) class D) data
- 4) The keyword _____ is required to declare a class. 4) _____
A) public B) class
C) private D) All of the above.
- 5) _____ is invoked to create an object. 5) _____
A) The main method B) A constructor
C) A method with the void return type D) A method with a return type
- 6) Which of the following statements are true? 6) _____
A) Constructors do not have a return type, not even void.
B) At least one constructor must always be defined explicitly.
C) Constructors must have the same name as the class itself.
D) A default no-arg constructor is provided automatically if no constructors are explicitly declared in the class.
E) Constructors are invoked using the new operator when an object is created.

7) Analyze the following code:

7) _____

```
public class Test {  
    public static void main(String[] args) {  
        A a = new A();  
        a.print();  
    }  
}
```

```
class A {  
    String s;
```

```
    A(String s) {  
        this.s = s;  
    }
```

```
    void print() {  
        System.out.println(s);  
    }  
}
```

- A) The program has a compilation error because class A is not a public class.
- B) The program compiles and runs fine and prints nothing.
- C) The program has a compilation error because class A does not have a default constructor.
- D) The program would compile and run if you change A a = new A() to A a = new A(5).

8) What is wrong in the following code?

8) _____

```
class TempClass {  
    int i;  
    public void TempClass(int j) {  
        int i = j;  
    }  
}
```

```
public class C {  
    public static void main(String[] args) {  
        TempClass temp = new TempClass(2);  
    }  
}
```

- A) The program compiles and runs fine.
- B) The program has a compilation error because TempClass does not have a default constructor.
- C) The program has a compilation error because TempClass does not have a constructor with an int argument.
- D) The program compiles fine, but it does not run because class C is not public.

9) Given the declaration Circle x = new Circle(), which of the following statement is most accurate.

9) _____

- A) x contains an object of the Circle type.
- B) x contains a reference to a Circle object.
- C) You can assign an int value to x.
- D) x contains an int value.

10) Analyze the following code.

10) _____

```
public class Test {  
    int x;  
  
    public Test(String t) {  
        System.out.println("Test");  
    }  
  
    public static void main(String[ ] args) {  
        Test test = null;  
        System.out.println(test.x);  
    }  
}
```

- A) The program has a syntax error because test is not initialized.
- B) The program has a runtime NullPointerException because test is null while executing test.x.
- C) The program has a syntax error because x has not been initialized.
- D) The program has a syntax error because Test does not have a default constructor.
- E) The program has a syntax error because you cannot create an object from the class that defines the object.

11) The default value for data field of a boolean type, numeric type, object type is _____, respectively.

11) _____

- A) true, 0, null
- B) true, 1, null
- C) false, 1, null
- D) false, 0, null
- E) true, 1, Null

12) Which of the following statements are true?

12) _____

- A) data fields have default values.
- B) You may assign an int value to a reference variable.
- C) A variable of a reference type holds a reference to where an object is stored in the memory.
- D) local variables do not have default values.
- E) A variable of a primitive type holds a value of the primitive type.

13) Analyze the following code:

13) _____

```
public class Test {  
    public static void main(String[ ] args) {  
        double radius;  
        final double PI= 3.15169;  
        double area = radius * radius * PI;  
        System.out.println("Area is " + area);  
    }  
}
```

- A) The program has no syntax errors but will get a runtime error because radius is not initialized.
- B) The program has a syntax error because a constant PI is defined inside a method.
- C) The program has syntax errors because the variable radius is not initialized.
- D) The program compiles and runs fine.

14) Analyze the following code.

14) _____

```
public class Test {  
    int x;  
  
    public Test(String t) {  
        System.out.println("Test");  
    }  
  
    public static void main(String[ ] args) {  
        Test test = new Test( );  
        System.out.println(test.x);  
    }  
}
```

- A) The program has a syntax error because you cannot create an object from the class that defines the object.
- B) The program has a syntax error because Test does not have a default constructor.
- C) The program has a syntax error because System.out.println method cannot be invoked from the constructor.
- D) The program has a syntax error because x has not been initialized.

15) Suppose TestCircle and Circle in Example 7.1 are in two separate files named TestCircle.java and Circle.java, respectively. What is the outcome of compiling TestCircle.java and then Circle.java?

15) _____

- A) Only TestCircle.java compiles.
- B) Only Circle.java compiles.
- C) Both compile fine.
- D) Neither compiles successfully.

16) Which of the following statement is most accurate?

16) _____

- A) An object may contain other objects.
- B) A reference variable refers to an object.
- C) A reference variable is an object.
- D) An object may contain the references of other objects.

17) The java.util.Date class is introduced in Section 7.4. Analyze the following code and choose the best answer:

17) _____

Which of the following code in A or B, or both creates an object of the Date class:

A:

```
public class Test {  
    public Test( ) {  
        new java.util.Date( );  
    }  
}
```

B:

```
public class Test {  
    public Test( ) {  
        java.util.Date date = new java.util.Date();  
    }  
}
```

- A) A.
- B) B.
- C) Neither

18) Variables that are shared by every instances of a class are _____.

- A) class variables
B) instance variables
C) private variables
D) public variables

18) _____

19) You should add the static keyword in the place of ? in Line _____ in the following code:

19) _____

```

1 public class Test {
2     private int age;
3
4     public ? int square(int n) {
5         return n * n;
6     }
7
8     public ? int getAge( ) {
9     }
10}

```

- A) in both line 4 and line 8
B) in line 4
C) in line 8
D) none

20) A method that is associated with an individual object is called _____.

- A) an instance method
B) an object method
C) a static method
D) a class method

20)

21) To declare a constant MAX_LENGTH as a member of the class, you write

- A) final static MAX_LENGTH = 99.98;
B) final static float MAX_LENGTH = 99.98;
C) final double MAX_LENGTH = 99.98;
D) final static double MAX_LENGTH = 99.98;
E) static double MAX_LENGTH = 99.98;

21)

22) Analyze the following code.

22)

```
public class Test {
    public static void main(String[ ] args) {
        int n = 2;
        xMethod(n);

        System.out.println("n is " + n);
    }

    void xMethod(int n) {
        n++;
    }
}
```

- A) The code prints n is 1.
B) The code prints n is 2.
C) The code has a syntax error because xMethod is not declared static.
D) The code has a syntax error because xMethod does not return a value.
E) The code prints n is 3.

23) What is the printout of the second println statement in the main method?

23) _____

```
public class Foo {
    int i;
    static int s;

    public static void main(String[ ] args) {
        Foo f1 = new Foo( );
        System.out.println("f1.i is " + f1.i + " f1.s is " + f1.s);
        Foo f2 = new Foo( );
        System.out.println("f2.i is " + f2.i + " f2.s is " + f2.s);
        Foo f3 = new Foo( );
        System.out.println("f3.i is " + f3.i + " f3.s is " + f3.s);
    }

    public Foo( ) {
        i++;
        s++;
    }
}
```

- A) f2.i is 2 f2.s is 2 B) f2.i is 1 f2.s is 1 C) f2.i is 2 f2.s is 1 D) f2.i is 1 f2.s is 2

24) What is the printout of the third println statement in the main method?

24) _____

```
public class Foo {
    int i;
    static int s;

    public static void main(String[ ] args) {
        Foo f1 = new Foo( );
        System.out.println("f1.i is " + f1.i + " f1.s is " + f1.s);
        Foo f2 = new Foo( );
        System.out.println("f2.i is " + f2.i + " f2.s is " + f2.s);
        Foo f3 = new Foo( );
        System.out.println("f3.i is " + f3.i + " f3.s is " + f3.s);
    }

    public Foo( ) {
        i++;
        s++;
    }
}
```

- A) f3.i is 1 f3.s is 2 B) f3.i is 3 f3.s is 1 C) f3.i is 1 f3.s is 3 D) f3.i is 1 f3.s is 1

25) What code may be filled in the blank without causing syntax or runtime errors:

25) _____

```
public class Test {  
    java.util.Date date;  
  
    public static void main(String[ ] args) {  
        Test test = new Test( );  
        System.out.println(______);  
    }  
}
```

- A) test.date
B) date
C) test.date.toString()
D) date.toString()

26) To prevent a class from being instantiated, _____

26) _____

- A) use the public modifier on the constructor.
B) use the private modifier on the constructor.
C) don't use any modifiers on the constructor.
D) use the static modifier on the constructor.

27) Analyze the following code:

27) _____

```
public class Test {  
    public static void main(String args[ ]) {  
        NClass nc = new NClass( );  
        nc.t = nc.t++;  
    }  
}
```

```
class NClass {  
    int t;  
    private NClass( ) {  
    }  
}
```

- A) The program compiles and runs fine.
B) The program has a compilation error because the NClass class has a private constructor.
C) The program does not compile because the parameter list of the main method is wrong.
D) The program compiles, but has a runtime error because t has no initial value.

28) Analyze the following code:

28) _____

```
public class Test {  
    private int t;  
  
    public static void main(String[ ] args) {  
        int x;  
        System.out.println(t);  
    }  
}
```

- A) t is non-static and it cannot be referenced in a static context in the main method.
- B) The variable x is not initialized and therefore causes errors.
- C) The program compiles and runs fine.
- D) The variable t is not initialized and therefore causes errors.
- E) The variable t is private and therefore cannot be accessed in the main method.

29) Analyze the following code and choose the best answer:

29) _____

```
public class Foo {  
    private int x;  
  
    public static void main(String[ ] args) {  
        Foo foo = new Foo( );  
        System.out.println(foo.x);  
    }  
}
```

- A) Since x is private, it cannot be accessed from an object foo.
- B) Since x is defined in the class Foo, it can be accessed by any method inside the class without using an object. You can write the code to access x without creating an object such as foo in this code.
- C) Since x is an instance variable, it cannot be directly used inside a main method. However, it can be accessed through an object such as foo in this code.
- D) You cannot create a self-referenced object; that is, foo is created inside the class Foo.

30) Which of the following statements are true?

30) _____

- A) Use the private modifier to encapsulate data fields.
- B) Encapsulating data fields makes the program easy to maintain.
- C) Encapsulating data fields helps prevent programming errors.
- D) Encapsulating data fields makes the program short.

31) Suppose you wish to provide an accessor method for a boolean property finished, what signature of the method should be?

31) _____

- | | |
|-------------------------------|----------------------------------|
| A) public void isFinished() | B) public boolean getFinished() |
| C) public void getFinished() | D) public boolean isFinished() |

32) Which of the following statements are true about an immutable object?

32) _____

- A) An immutable object contains no mutator methods.
- B) All properties of an immutable object must be private.
- C) An object type property in an immutable object must also be immutable.
- D) The contents of an immutable object cannot be modified.
- E) All properties of an immutable object must be of primitive types.

33) When invoking a method with an object argument, _____ is passed.

33) _____

- A) the contents of the object
- B) the reference of the object
- C) the object is copied, then the reference of the copied object Key: c
- D) a copy of the object

34) What is the value of my.Count displayed?

34) _____

```
public class Test {
    public static void main(String[ ] args) {
        Count myCount= new Count( );
        int times = 0;

        for (int i=0; i<100; i++)
            increment(myCount, times);

        System.out.println(
            "myCount.count= " + myCount.count);
        System.out.println("times = "+ times);
    }

    public static void increment(Count c, int times) {
        c.count++;
        times++;
    }
}

class Count {
    int count;

    Count(int c) {
        count = c;
    }

    Count( ) {
        count = 1;
    }
}
```

A) 100

B) 99

C) 98

D) 101

35) What is the value of times displayed?

35) _____

```
public class Test {
    public static void main(String[] args) {
        Count myCount = new Count();
        int times = 0;

        for (int i=0; i<100; i++)
            increment(myCount, times);

        System.out.println(
            "myCount.count = " + myCount.count);
        System.out.println("times = " + times);
    }

    public static void increment(Count c, int times) {
        c.count++;
        times++;
    }
}

class Count {
    int count;

    Count(int c) {
        count = c;
    }

    Count() {
        count = 1;
    }
}
```

A) 99 B) 98 C) 100 D) 101 E) 0

36) What is the printout for the first statement in the main method?

36) _____

```
public class Foo {
    static int i = 0;
    static int j = 0;

    public static void main(String[] args) {
        int i = 2;
        int k = 3;
        {
            int j = 3;
            System.out.println("i + j is " + i + j);
        }

        k = i + j;
        System.out.println("k is " + k);
        System.out.println("j is " + j);
    }
}
```

A) i + j is 6 B) i + j is 5 C) i + j is 23 D) i + j is 22

37) What is the printout for the second statement in the main method?

37) _____

```
public class Foo {
    static int i = 0;
    static int j = 0;

    public static void main(String[ ] args) {
        int i = 2;
        int k = 3;
        {
            int j = 3;
            System.out.println("i + j is " + i + j);
        }

        k = i + j;
        System.out.println("k is " + k);
        System.out.println("j is " + j);
    }
}
```

- A) k is 1 B) k is 0 C) k is 3 D) k is 2

38) What is the printout for the third statement in the main method?

38) _____

```
public class Foo {
    static int i = 0;
    static int j = 0;

    public static void main(String[ ] args) {
        int i = 2;
        int k = 3;
        {
            int j = 3;
            System.out.println("i + j is " + i + j);
        }

        k = i + j;
        System.out.println("k is " + k);
        System.out.println("j is " + j);
    }
}
```

- A) j is 3 B) j is 1 C) j is 0 D) j is 2

39) You can declare two variables with the same name in _____.

39) _____

- A) two nested blocks in a method
B) a block
C) a method one as a formal parameter and the other as a local variable
D) different methods in a class

40) Analyze the following code:

40) _____

```
class Circle {  
    private double radius;  
  
    public Circle(double radius) {  
        radius = radius;  
    }  
}
```

- A) The program will compile, but you cannot create an object of Circle with a specified radius. The object will always have radius 0.
- B) The program does not compile because Circle does not have a default constructor.
- C) The program has a compilation error because you cannot assign radius to radius.
- D) The program has a compilation error because it does not have a main method.

41) Analyze the following code:

41) _____

```
class Test {  
    private double i;  
  
    public Test(double i) {  
        this.t();  
        this.i = i;  
    }  
  
    public Test() {  
        System.out.println("Default constructor");  
        this(1);  
    }  
  
    public void t() {  
        System.out.println("Invoking t");  
    }  
}
```

- A) this.t() may be replaced by t().
- B) this.i may be replaced by i.
- C) this(1) must be replaced by this(1.0).
- D) this(1) must be called before System.out.println("Default constructor").

42) Given the declaration Circle[] x = new Circle[10], which of the following statements is most accurate.

42) _____

- A) x contains an array of ten int values.
- B) x contains a reference to an array and each element in the array can hold a Circle object.
- C) x contains an array of ten objects of the Circle type.
- D) x contains a reference to an array and each element in the array can hold a reference to a Circle object.

43) Assume java.util.Date[] dates = new java.util.Date[10], which of the following statements are true?

43) _____

- A) dates is null.
- B) dates = new Date() is fine, which creates a new Date object and assigns to dates.
- C) dates[0] is null.
- D) dates = new java.util.Date[5] is fine, which assigns a new array to dates.

- 44) Java assigns a default value to a data member of a class if the data is not initialized. 44) _____
A) True B) False
- 45) The default value for a data member of boolean type is true. 45) _____
A) True B) False
- 46) The default value null is assigned to a data member of object type, even though the data member is not created yet. 46) _____
A) True B) False
- 47) Java assigns a default value to a local variable in a method if the variable is not initialized. 47) _____
A) True B) False
- 48) The default constructor has no arguments. 48) _____
A) True B) False
- 49) You can always use the default constructor even though the non-default constructors are defined in the class. 49) _____
A) True B) False
- 50) You can access a class variable using a syntax like `objectName.classVariable` or `ClassName.classVariable`. 50) _____
A) True B) False
- 51) You cannot use the private modifier on classes. 51) _____
A) True B) False
- 52) You cannot use modifiers on local variables inside a method except final. 52) _____
A) True B) False
- 53) A static method in a class can access the instance variables in the same class. 53) _____
A) True B) False
- 54) A static method in a class can access the class variables in the same class. 54) _____
A) True B) False
- 55) You can declare a local variable in a method that has same name as an instance variable in the class. 55) _____
A) True B) False
- 56) You can declare variables of the same name in a method even though they are in the same block. 56) _____
A) True B) False
- 57) You can declare variables of the same name in a method if they are in non-nesting blocks. 57) _____
A) True B) False
- 58) You can create an instance of the Math class. 58) _____
A) True B) False

- 59) You use underline to denote static variables and methods. 59) _____
A) True B) False
- 60) You use the plus sign (+) to denote public data or methods. 60) _____
A) True B) False
- 61) The internal state of an immutable class cannot be changed. String is an immutable class. 61) _____
A) True B) False
- 62) The order of methods in a class is immaterial. 62) _____
A) True B) False
- 63) _____ can be accessed from any instance method in the class. 63) _____
A) A local variable B) A static variable C) An instance variable
- 64) _____ can be accessed from any static method in the class. 64) _____
A) A static variable B) A local variable C) An instance variable
- 65) A constructor can access _____. 65) _____
A) A local variable defined in any method B) A private instance variable
C) A static variable D) A public instance variable
- 66) You use the _____ operator to access members of an object. 66) _____
A) % B) * C) . D) ()
- 67) Suppose you declare Date d. d is now called _____. 67) _____
A) a reference variable for an object B) an object value
C) an object D) a variable that holds an integer value
- 68) Array variable are reference variables. 68) _____
A) True B) False
- 69) All data fields in an object have default values. 69) _____
A) True B) False
- 70) All local variables in a method have default values. 70) _____
A) True B) False
- 71) If the parameter is an object, both formal parameter and actual parameter reference to the same object. 71) _____
A) True B) False
- 72) If the parameter is of a primitive type, both formal parameter and actual parameter reference to the same memory. 72) _____
A) True B) False

73) Which of the following are properties of a constructor?

73) _____

- A) Constructors may be overloaded.
- B) A constructor is called using the new operator.
- C) A constructor must have the same name as the class.

74) Java uses _____ to reference the current object.

74) _____

- A) null
- B) that
- C) thisObject
- D) this

Answer Key

Testname: UNTITLED1

- | | |
|----------------|-------------|
| 1) A | 51) A |
| 2) C | 52) A |
| 3) C | 53) B |
| 4) B | 54) A |
| 5) B | 55) A |
| 6) A, C, D, E | 56) B |
| 7) C, D | 57) A |
| 8) C | 58) B |
| 9) B | 59) A |
| 10) B | 60) A |
| 11) D | 61) A |
| 12) A, C, D, E | 62) A |
| 13) C | 63) B, C |
| 14) B | 64) A |
| 15) C | 65) B, D |
| 16) B, D | 66) C |
| 17) A, B | 67) A |
| 18) A | 68) A |
| 19) B | 69) A |
| 20) A | 70) B |
| 21) D | 71) A |
| 22) C | 72) B |
| 23) D | 73) A, B, C |
| 24) C | 74) D |
| 25) A | |
| 26) B | |
| 27) B | |
| 28) A | |
| 29) C | |
| 30) A, B, C | |
| 31) D | |
| 32) A, B, C, D | |
| 33) B | |
| 34) D | |
| 35) E | |
| 36) C | |
| 37) D | |
| 38) C | |
| 39) D | |
| 40) A | |
| 41) A, D | |
| 42) D | |
| 43) C, D | |
| 44) A | |
| 45) B | |
| 46) A | |
| 47) B | |
| 48) A | |
| 49) B | |
| 50) A | |

Exam

Name _____

- | | |
|-----------|-----------|
| 1) _____ | 50) _____ |
| 2) _____ | 51) _____ |
| 3) _____ | 52) _____ |
| 4) _____ | 53) _____ |
| 5) _____ | 54) _____ |
| 6) _____ | 55) _____ |
| 7) _____ | 56) _____ |
| 8) _____ | 57) _____ |
| 9) _____ | 58) _____ |
| 10) _____ | 59) _____ |
| 11) _____ | 60) _____ |
| 12) _____ | 61) _____ |
| 13) _____ | 62) _____ |
| 14) _____ | 63) _____ |
| 15) _____ | 64) _____ |
| 16) _____ | 65) _____ |
| 17) _____ | 66) _____ |
| 18) _____ | 67) _____ |
| 19) _____ | 68) _____ |
| 20) _____ | 69) _____ |
| 21) _____ | 70) _____ |
| 22) _____ | 71) _____ |
| 23) _____ | 72) _____ |
| 24) _____ | 73) _____ |
| 25) _____ | 74) _____ |
| 26) _____ | |
| 27) _____ | |
| 28) _____ | |
| 29) _____ | |
| 30) _____ | |
| 31) _____ | |
| 32) _____ | |
| 33) _____ | |
| 34) _____ | |
| 35) _____ | |
| 36) _____ | |
| 37) _____ | |
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| 40) _____ | |
| 41) _____ | |
| 42) _____ | |
| 43) _____ | |
| 44) _____ | |
| 45) _____ | |
| 46) _____ | |
| 47) _____ | |
| 48) _____ | |
| 49) _____ | |