

1. Which of the following declarations does not compile?

- A. `double num1, int num2 = 0;`
- B. `int num1, num2;`
- C. `int num1, num2 = 0;`
- D. `int num1 = 0, num2 = 0;`

2. What is the output of the following?

```
public static void main(String... args) {  
    String chair, table = "metal";  
    chair = chair + table;  
    System.out.println(chair);  
}
```

- A. `metal`
- B. `metalmetal`
- C. `nullmetal`
- D. The code does not compile.

3. Which is correct about an instance variable of type `String`?

- A. It defaults to an empty string.
- B. It defaults to `null`.
- C. It does not have a default value.
- D. It will not compile without initializing on the declaration line.

4. Which of the following is not a valid variable name?

- A. `_blue`
- B. `2blue`
- C. `blue$`
- D. `Blue`

5. Which of these class names best follows standard Java naming conventions?

- A. `fooBar`
- B. `FooBar`
- C. `FOO_BAR`
- D. `F_o_o_B_a_r`

6. How many of the following methods compile?

```
public String convert(int value) {  
    return value.toString();  
}
```

```

}
public String convert(Integer value) {
    return value.toString();
}
public String convert(Object value) {
    return value.toString();
}

```

- A. None
- B. One
- C. Two
- D. Three

7. Which of the following does not compile?

- A. `int num = 999;`
- B. `int num = 9_9_9;`
- C. `int num = _9_99;`
- D. None of the above; they all compile.

8. Which of the following is a wrapper class?

- A. `int`
- B. `Int`
- C. `Integer`
- D. `Object`

9. What is the result of running this code?

```

public class Values {
    integer a = Integer.valueOf("1");
    public static void main(String[] nums) {
        integer a = Integer.valueOf("2");
        integer b = Integer.valueOf("3");
        System.out.println(a + b);
    }
}

```

- A. 4
- B. 5
- C. The code does not compile.
- D. The code compiles but throws an exception at runtime.

10. Which best describes what the `new` keyword does?

- A. Creates a copy of an existing object and treats it as a new one

- B. Creates a new primitive
- C. Instantiates a new object
- D. Switches an object reference to a new one

11. Which is the first line to trigger a compiler error?

```
double d1 = 5f;      // p1
double d2 = 5.0;     // p2
float f1 = 5f;       // p3
float f2 = 5.0;      // p4
```

- A. p1
- B. p2
- C. p3
- D. p4

12. Which of the following lists of primitive types are presented in order from smallest to largest data type?

- A. byte, char, float, double
- B. byte, char, double, float
- C. char, byte, float, double
- D. char, double, float, bigint

13. Which of the following is not a valid order for elements in a class?

- A. Constructor, instance variables, method names
- B. Instance variables, constructor, method names
- C. Method names, instance variables, constructor
- D. None of the above: all orders are valid.

14. Which of the following lines contains a compiler error?

```
String title = "Weather";           // line x1
int hot, double cold;                // line x2
System.out.println(hot + " " + title); // line x3
```

- A. x1
- B. x2
- C. x3
- D. None of the above

15. How many instance initializers are in this code?

```
1: public class Bowling {
```

```

2:      { System.out.println(); }
3:      public Bowling () {
4:          System.out.println();
5:      }
6:      static { System.out.println(); }
7:      { System.out.println(); }
8:  }

```

- A. None
- B. One
- C. Two
- D. Three

16. Of the types `double`, `int`, and `short`, how many could fill in the blank to have this code output 0?

```

public static void main(String[] args) {
    _____defaultValue;
    System.out.println(defaultValue);
}

```

- A. None
- B. One
- C. Two
- D. Three

17. What is true of the `finalize()` method?

- A. It may be called zero or one times.
- B. It may be called zero or more times.
- C. It will be called exactly once.
- D. It may be called one or more times.

18. Which of the following is not a wrapper class?

- A. `Double`
- B. `Integer`
- C. `Long`
- D. `String`

19. Suppose you have the following code. Which of the images best represents the state of the references right before the end of the main method, assuming garbage collection hasn't run?

```

1: public class Link {

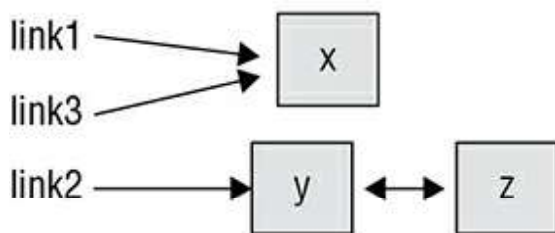
```

```

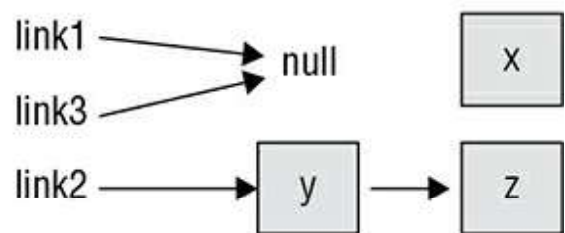
2:     private String name;
3:     private Link next;
4:     public Link(String name, Link next) {
5:         this.name = name;
6:         this.next = next;
7:     }
8:     public void setNext(Link next) {
9:         this.next = next;
10:    }
11:    public Link getNext() {
12:        return next;
13:    }
14:    public static void main(String... args) {
15:        Link link1 = new Link("x", null);
16:        Link link2 = new Link("y", link1);
17:        Link link3 = new Link("z", link2);
18:        link2.setNext(link3);
19:        link3.setNext(link2);
20:        link1 = null;
21:        link3 = null;
22:    }
23: }

```

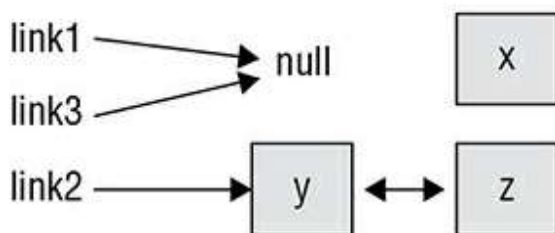
Option A



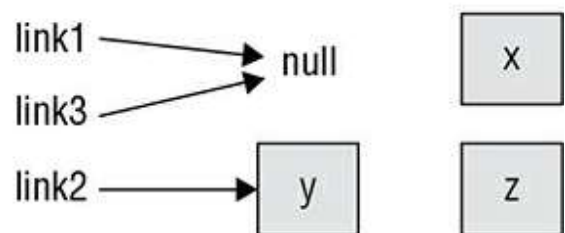
Option B



Option C



Option D



A. Option A

B. Option B

C. Option C

D. Option D

10. Which type can fill in the blank?

```

_____ pi = 3.14;

```

A. byte

- B. float
- C. double
- D. short

21. What is the first line in the following code to not compile?

```
public static void main(String[] args) {  
    int Integer = 0;           // k1  
    Integer int = 0;           // k2  
    Integer ++;                // k3  
    int++;                      // k4  
}
```

- A. k1
- B. k2
- C. k3
- D. k4

22. Suppose `foo` is a reference to an instance of a class. Which of the following is not true about `foo.bar`?

- A. `bar` is an instance variable.
- B. `bar` is a local variable.
- C. It can be used to read from `bar`.
- D. It can be used to write to `bar`.

23. Which of the following is not a valid class declaration?

- A. `class building {}`
- B. `class Cost$ {}`
- C. `class 5MainSt {}`
- D. `class _Outside {}`

24. Which of the following can fill in the blanks to make this code compile?

```
_____d = new_____ (1_000_000_.00);
```

- A. double, double
- B. double, Double
- C. Double, double
- D. None of the above

25. Which is correct about a local variable of type `String`?

- A. It defaults to an empty string.

- B. It defaults to `null`.
- C. It does not have a default value.
- D. It will not compile without initializing on the declaration line.

26. Of the types `double`, `int`, `long`, and `short`, how many could fill in the blank to have this code output 0?

```
static _____defaultValue;  
  
public static void main(String[] args) {  
    System.out.println(defaultValue);  
}
```

- A. One
- B. Two
- C. Three
- D. Four

27. Which of the following is true about primitives?

- A. You can call methods on a primitive.
- B. You can convert a primitive to a wrapper class object simply by assigning it.
- C. You can convert a wrapper class object to a primitive by calling `valueOf()`.
- D. You can store a primitive directly into an `ArrayList`.

28. What is the output of the following?

```
Integer integer = new Integer(4);  
System.out.print(integer.byteValue());  
  
System.out.print("-");  
  
int i = new Integer(4);  
System.out.print(i.byteValue());
```

- A. 4-0
- B. 4-4
- C. The code does not compile.
- D. The code compiles but throws an exception at runtime.

29. Given the following code, fill in the blank to have the code print `bounce`.

```
public class TennisBall {  
    public TennisBall() {  
        System.out.println("bounce");  
    }  
    public static void main(String[] slam) {
```

```
    }  
}
```

- A. `TennisBall;`
- B. `TennisBall();`
- C. `new TennisBall;`
- D. `new TennisBall();`

10. Which of the following correctly assigns `animal` to both variables?

- I. `String cat = "animal", dog = "animal";`
- II. `String cat = "animal"; dog = "animal";`
- III. `String cat, dog = "animal";`
- IV. `String cat, String dog = "animal";`

- A. I
- B. I, II
- C. I, III
- D. I, II, III, IV

11. Which two primitives have wrapper classes that are not merely the name of the primitive with an uppercase letter?

- A. `byte` and `char`
- B. `byte` and `int`
- C. `char` and `int`
- D. None of the above

12. Which of the following is true about `String` instance variables?

- A. They can be set to `null`.
- B. They can never be set from outside the class they are defined in.
- C. They can only be set in the constructor.
- D. They can only be set once per run of the program.

13. Which statement is true about primitives?

- A. Primitive types begin with a lowercase letter.
- B. Primitive types can be set to `null`.
- C. `String` is a primitive.
- D. You can create your own primitive types.

4. How do you force garbage collection to occur at a certain point?

- A. Call `System.forceGc()`
- B. Call `System.gc()`
- C. Call `System.requireGc()`
- D. None of the above

5. How many of the `String` objects are eligible for garbage collection right before the end of the `main` method?

```
public static void main(String[] fruits) {  
    String fruit1 = new String("apple");  
    String fruit2 = new String("orange");  
    String fruit3 = new String("pear");  
  
    fruit3 = fruit1;  
    fruit2 = fruit3;  
    fruit1 = fruit2;  
}
```

- A. None
- B. One
- C. Two
- D. Three

6. Which of the following can fill in the blanks to make this code compile?

```
_____d = new _____ (1_000_000.00);
```

- A. `double, double`
- B. `double, Double`
- C. `Double, double`
- D. None of the above

7. What does the following output?

```
1: public class InitOrder {  
2:     public String first = "instance";  
3:     public InitOrder() {  
4:         first = "constructor";  
5:     }  
6:     { first = "block"; }  
7:     public void print() {  
8:         System.out.println(first);  
9:     }  
10:    public static void main(String... args) {  
11:        new InitOrder().print();  
12:    }  
13: }
```

- A. block
- B. constructor
- C. instance
- D. The code does not compile.

8. How many of the following lines compile?

```
int i = null;
Integer in = null;
String s = null;
```

- A. None
- B. One
- C. Two
- D. Three

9. Which pairs of statements can accurately fill in the blanks in this table?

Variable Type	Can be called within the class from what type of method
Instance	Blank 1: _____
Static	Blank 2: _____

- A. Blank 1: an instance method only, Blank 2: a static method only
- B. Blank 1: an instance or static method, Blank 2: a static method only
- C. Blank 1: an instance method only, Blank 2: an instance or static method
- D. Blank 1: an instance or static method, Blank 2: an instance or static method

10. Which of the following does not compile?

- A. `double num = 2.718;`
- B. `double num = 2._718;`
- C. `double num = 2.7_1_8;`
- D. None of the above; they all compile.

11. Which of the following lists of primitive numeric types is presented in order from smallest to largest data type?

- A. `byte, short, int, long`
- B. `int, short, byte, long`
- C. `short, byte, int, long`
- D. `short, int, byte, long`

2. Fill in the blank to make the code compile:

```
package animal;
public class Cat {
    public String name;
    public static void main(String[] meow) {
        Cat cat = new Cat();
        _____ = "Sadie";
    }
}
```

- A. cat.name
- B. cat-name
- C. cat.setName
- D. cat[name]

3. Which of the following is the output of this code, assuming it runs to completion?

```
package store;
public class Toy {
    public void play() {
        System.out.print("play-");
    }
    public void finalizer() {
        System.out.print("clean-");
    }
    public static void main(String[] fun) {
        Toy car = new Toy();
        car.play();
        System.gc();
        Toy doll = new Toy();
        doll.play();
    }
}
```

- A. play-
- B. play-play-
- C. play-clean-play-
- D. play-play-clean-clean-

4. Which is the most common way to fill in the blank to implement this method?

```
public class Penguin {
    private double beakLength;
    public static void setBeakLength(Penguin p, int b) {
        _____
    }
}
```

- A. p.beakLength = b;

B. `p['beakLength'] = b;`

C. `p[beakLength] = b;`

D. None of the above

15. Fill in the blanks to indicate whether a primitive or wrapper class can be assigned without the compiler using the autoboxing feature.

```
_____first = Integer.parseInt("5");  
_____second = Integer.valueOf("5");
```

A. `int, int`

B. `int, Integer`

C. `Integer, int`

D. `Integer, Integer`

16. How many objects are eligible for garbage collection right before the end of the `main` method?

```
1:  public class Person {  
2:      public Person youngestChild;  
3:  
4:      public static void main(String... args) {  
5:          Person elena = new Person();  
6:          Person diana = new Person();  
7:          elena.youngestChild = diana;  
8:          diana = null;  
9:          Person zoe = new Person();  
10:         elena.youngestChild = zoe;  
11:         zoe = null;  
12:     }  
13: }
```

A. None

B. One

C. Two

D. Three

17. Which is a valid constructor for this class?

```
public class TennisBall {  
}
```

A. `public TennisBall static create() { return new TennisBall(); }`

B. `public TennisBall static newInstance() { return new TennisBall(); }`

C. `public TennisBall() {}`

D. `public void TennisBall() {}`

8. Which of the following is not a possible output of this code, assuming it runs to completion?

```
package store;
public class Toy {
    public void play() {
        System.out.print("play-");
    }
    public void finalize() {
        System.out.print("clean-");
    }
    public static void main(String[] args) {
        Toy car = new Toy();
        car.play();
        System.gc();
        Toy doll = new Toy();
        doll.play();
    }
}
```

- A. play-
- B. play-play-
- C. play-play-clean-
- D. play-play-clean-clean-

9. Which converts a primitive to a wrapper class object without using autoboxing?

- A. Call the `asObject()` method
- B. Call the constructor of the wrapper class
- C. Call the `convertToObject()` method
- D. Call the `toObject()` method

10. What is the output of the following?

```
package beach;
public class Sand {
    public Sand() {
        System.out.print("a");
    }
    public void Sand() {
        System.out.print("b");
    }
    public void run() {
        new Sand();
        Sand();
    }
    public static void main(String... args) {
        new Sand().run();
    }
}
```

- A. a

B. ab

C. aab

D. None of the above