

Core Java Mcq Test

Question 1:

Which of the following is not a primitive data type in Java?

- A. int
- B. float
- ☒ C. String
- D. char

Question 2:

Which primitive data type is used to store a single 16-bit Unicode character?

- A. byte
- B. int
- ☒ C. char
- D. short

Question 3:

What is the size of the primitive data type long in Java?

- A. 4 bytes
- ☒ B. 8 bytes
- C. 2 bytes
- D. 1 byte

Question 4:

Which of the following data types is used to store a value with a floating decimal point?

- ☒ A. float
- B. double
- C. boolean

D. long

Question 5:

Which data type in Java is used to represent true or false values?

☒ A. boolean

B. byte

C. char

D. int

Question 6:

What is the default value of a boolean variable in Java?

A. true

☒ B. false

C. 0

D. null

Question 7:

Which of the following is the correct syntax to declare a variable of type double in Java?

☒ A. double x = 3.14;

B. double x = "3.14";

C. double x = '3.14';

D. double x = 3,14;

Question 8:

Which of the following is not a valid datatype in Java?

A. int

B. float

C. byte

 D. decimal

Question 9:

What is the size of the int datatype in Java?

A. 1 byte

B. 2 bytes

 C. 4 bytes

D. 8 bytes

Question 10:

Which of the following can be used to declare a variable to store a number with a fractional part?

A. int

B. long

 C. double

D. byte

Question 11:

What is the default value of a char variable in Java?

A. '0'

B. '\u0000'

 C. '\u0000'

D. null

Question 12:

Which of the following is the smallest integer data type in Java?

A. short

B. int

C. long

☒ D. byte

Question 13:

Which of the following statements is true about the float data type in Java?

☒ A. It is a single-precision 32-bit IEEE 754 floating point.

B. It is a double-precision 64-bit IEEE 754 floating point.

C. It is an integer data type.

D. It is used to store characters.

Question 14:

Which of the following literals can be assigned to a variable of type byte in Java?

A. 128

B. 256

C. -129

☒ D. 100

Question 15:

Which of the following data types can hold a value of 3.14?

☒ A. float

B. int

C. byte

D. short

Question 16:

What is the range of values that can be stored in a variable of type short in Java?

A. -128 to 127

☒ B. -32768 to 32767

C. -2147483648 to 2147483647

D. 0 to 65535

Question 17:

Which of the following is used to declare a variable that can hold a large integer value?

A. short

B. int

C. byte

☒ D. long

Question 18:

What will be the output of the following code snippet?

```
int x = 10;
```

```
int y = 5;
```

```
System.out.println(x / y);
```

A. 2.0

☒ B. 2

C. 2.0000

D. 2.000000

Question 19:

Which of the following datatypes has the highest precision?

A. float

☒ B. double

C. int

D. long

Question 20:

Which of the following is not a keyword in Java?

- A. transient
- B. volatile
- C. include
- D. synchronized

Question 21:

Which of the following is the correct way to declare a variable in Java?

- A. int 1x = 10;
- B. int x = 10;
- C. float x = "10.0";
- D. String x = '10';

Question 22:

What is the default value of a local variable in Java?

- A. 0
- B. null
- C. undefined
- D. Local variables do not have a default value.

Question 23:

Which of the following variable names is invalid in Java?

- A. _age
- B. \$salary
- C. 1name
- D. userName

Question 24:

Which keyword is used to declare a constant variable in Java?

- A. final

B. static

C. const

D. volatile

Question 25:

What will be the output of the following code?

```
int x;
```

```
x = 5;
```

```
System.out.println(x);
```

A. Compilation error

☒ B. 5

C. 0

D. null

Question 26:

Which of the following is not a valid way to declare a variable in Java?

A. `int x = 10;`

B. `int y;`

☒ C. `int z = x + y;`

D. `int w = 0;`

Question 27:

What is the correct syntax to declare a variable that can hold a string value?

A. `char x = "Hello";`

☒ B. `String x = "Hello";`

C. `char x = 'Hello';`

D. `String x = 'Hello';`

Question 28:

Which of the following statements about variable scope in Java is true?

- A. A variable declared inside a method is accessible outside the method.
- B. A variable declared inside a block is accessible outside the block.
- C. A variable declared in a class is accessible throughout the class.
- ☒ D. A variable declared inside a method is accessible only within the method.

Question 29:

What is the correct way to declare multiple variables of the same type in Java?

- A. `int x = 1, y = 2, z = 3;`
- B. `int x, y, z = 1, 2, 3;`
- C. `int x = 1; int y = 2; int z = 3;`
- ☒ D. Both A and C

Question 30:

Which of the following is true about instance variables in Java?

- A. They are declared inside a method.
- ☒ B. They are declared outside any method and inside a class.
- C. They are local variables.
- D. They do not have a default value.

Question 31:

Which of the following is not an arithmetic operator in Java?

- A. `+`
- B. `-`
- C. `*`
- ☒ D. `&&`

Question 32:

What will be the output of the following code?


```
int x = 10;
```

```
int y = 20;
```

```
System.out.println(x + y * 2);
```

A. 40

☒ B. 50

C. 60

D. 70

Question 33:

Which of the following operators is used for concatenation of strings in Java?

A. &

☒ B. +

C. ++

D. *

Question 34:

What is the result of the following expression?

```
int x = 5;
```

```
int y = 10;
```

```
int z = x++ + ++y;
```

```
System.out.println(z);
```

A. 15

B. 16

☒ C. 17

D. 18

Question 35:

Which of the following is the correct syntax for the ternary operator in Java?

☒ A. condition ? expression1 : expression2;

B. condition : expression1 ? expression2;

C. condition ? expression1, expression2;

D. condition : expression1, expression2;

Question 36:

What will be the output of the following code?

```
int a = 10;
```

```
int b = 5;
```

```
a += b;
```

```
System.out.println(a);
```

A. 5

B. 10

☒ C. 15

D. 20

Question 37:

Which of the following is not a relational operator in Java?

A. ==

B. !=

C. >=

☒ D. &

Question 38:

Which operator is used to perform bitwise AND operation in Java?

A. &&

☒ B. &

C. |

D. ||

Question 39:

What will be the output of the following code?

```
int a = 5;
```

```
int b = 2;
```

```
System.out.println(a / b);
```

A. 2.5

☒ B. 2

C. 2.0

D. 2.50

Question 40:

Which of the following operators has the highest precedence in Java?

A. +

B. *

☒ C. ()

D. =

Question 41:

What is a constructor in Java?

☒ A. A special type of method used to initialize objects.

B. A method that returns the type of the class.

C. A variable that holds the reference to the object.

D. A class that contains methods.

Question 42:

Which of the following is true about constructors in Java?

- A. Constructors can have a return type.
- B. Constructors cannot be overloaded.
- ☒ C. Constructors are called automatically when an object is created.
- D. Constructors cannot have parameters.

Question 43:

What will be the output of the following code?

```
class A {  
    A() {  
        System.out.println("Constructor called");  
    }  
}  
  
public class Test {  
    public static void main(String[] args) {  
        A obj = new A();  
    }  
}
```

- A. Compilation error
- B. Runtime error
- C. No output
- ☒ D. Constructor called

Question 44:

Which of the following statements is true about default constructors?

- A. A default constructor is provided by the programmer.
- B. A default constructor takes parameters.
- ☒ C. A default constructor is provided by the Java compiler if no constructors are defined.

D. A default constructor returns an integer value.

Question 45:

Can constructors be overloaded in Java?

☒ A. Yes

B. No

C. Only if they have the same number of parameters

D. Only if they have different return types

Question 46:

Which keyword is used to call one constructor from another in the same class?

☒ A. this

B. super

C. class

D. new

Question 47:

What will be the output of the following code?

```
class A {  
    A() {  
        System.out.println("Default Constructor");  
    }  
    A(int x) {  
        System.out.println("Parameterized Constructor");  
    }  
}  
  
public class Test {
```

```
public static void main(String[] args) {  
    A obj = new A(10);  
}  
}
```

A. Default Constructor

☒ B. Parameterized Constructor

C. Compilation error

D. Runtime error

Question 48:

Which of the following is not a property of a constructor?

A. It has the same name as the class.

B. It can have different access modifiers.

☒ C. It can return a value.

D. It does not have a return type.

Question 49:

What will be the output of the following code?

```
class A {  
    int x;  
    A() {  
        x = 10;  
    }  
}  
  
public class Test {  
    public static void main(String[] args) {  
        A obj = new A();  
    }  
}
```

```
System.out.println(obj.x);
```

```
}
```

```
}
```

A. 0

☒ B. 10

C. Compilation error

D. Runtime error

Question 50:

Which of the following is true about the use of super() in constructors?

A. It is used to call the default constructor of the same class.

B. It is used to call the parameterized constructor of the same class.

☒ C. It is used to call the default constructor of the superclass.

D. It is used to call the parameterized constructor of the superclass.

Question 51:

Which of the following is not a Java control flow statement?

A. if

B. for

C. while

☒ D. repeat

Question 52:

What will be the output of the following code?

```
int x = 10;
```

```
if (x > 5) {
```

```
    System.out.println("x is greater than 5");
```

```
} else {
```

```
System.out.println("x is not greater than 5");  
}
```

- ☒ A. x is greater than 5
- ☐ B. x is not greater than 5
- ☐ C. Compilation error
- ☐ D. Runtime error

Question 53:

Which of the following is true about the for loop in Java?

- ☐ A. It is used to execute a block of code once.
- ☒ B. It is used to execute a block of code zero or more times.
- ☐ C. It is used to execute a block of code only if a condition is true.
- ☐ D. It is used to execute a block of code at least once.

Question 54:

What is the output of the following code?

```
for (int i = 0; i < 5; i++) {  
    System.out.print(i + " ");  
}
```

- ☒ A. 0 1 2 3 4
- ☐ B. 1 2 3 4 5
- ☐ C. 0 1 2 3 4 5
- ☐ D. 1 2 3 4

Question 55:

Which keyword is used to exit a loop in Java?

- ☐ A. exit
- ☒ B. break

C. continue

D. stop

Question 56:

What will be the output of the following code?

```
int x = 1;
while (x < 3) {
    System.out.print(x + " ");
    x++;
}
```

 A. 1 2

B. 1 2 3

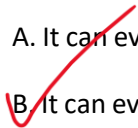
C. 0 1 2

D. 2 3

Question 57:

Which of the following statements is true about the switch statement in Java?

A. It can evaluate only boolean expressions.

 B. It can evaluate expressions of type byte, short, char, int, enum, String, and some wrapper classes.

C. It can evaluate only integer expressions.

D. It cannot have a default case.

Question 58:

What will be the output of the following code?

```
int day = 3;
switch (day) {
    case 1:
        System.out.println("Monday");
}
```

```
break;
```

```
case 2:
```

```
    System.out.println("Tuesday");
```

```
    break;
```

```
case 3:
```

```
    System.out.println("Wednesday");
```

```
    break;
```

```
default:
```

```
    System.out.println("Invalid day");
```

```
}
```

A. Monday

B. Tuesday

☒ C. Wednesday

D. Invalid day

Question 59:

Which of the following loops will execute the code block at least once?

A. for loop

B. while loop

☒ C. do-while loop

D. None of the above

Question 60:

What will be the output of the following code?

```
for (int i = 0; i < 5; i++) {
```

```
    if (i == 3) {
```

```
        break;
    }
    System.out.print(i + " ");
}
```

A. 0 1 2 3

☒ B. 0 1 2

C. 0 1 2 3 4

D. 1 2 3

Question 61:

Which of the following statements is true about classes in Java?

☒ A. A class can have only one constructor.

B. A class is a blueprint for creating objects.

C. A class cannot contain other classes.

D. A class must be declared as public.

Question 62:

Which keyword is used to create an object in Java?

A. class

☒ B. object

C. new

D. create

Question 63:

What will be the output of the following code?

```
class A {
    void display() {
        System.out.println("Hello World");
    }
}
```

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

A. Compilation error

B. Hello World

☒ C. Runtime error

D. No output

Question 64:

Which of the following statements is true about objects in Java?

A. Objects are instances of a class.

B. Objects cannot have methods.

☒ C. Objects are created using the class keyword.

D. Objects do not have attributes.

Question 65:

What will be the output of the following code?

```
class A {  
  
    int x = 5;  
  
}  
  
public class Test {  
  
    public static void main(String[] args) {
```

```
A obj1 = new A();
```

```
A obj2 = new A();
```

```
obj1.x = 10;
```

```
System.out.println(obj2.x);
```

```
}
```

```
}
```

A. 5

B. 10

C. Compilation error

D. Runtime error

Question 66:

Which of the following is used to access members of an object in Java?

A. ::

B. #

C. ->

D. .

Question 67:

What will be the output of the following code?

```
class A {
```

```
    int x = 10;
```

```
    void display() {
```

```
        System.out.println(x);
```

```
    }
```

```
}
```

```
public class Test {
```

```
public static void main(String[] args) {  
  
    A obj = new A();  
  
    obj.display();  
  
}  
}
```

A. Compilation error

☒ B. 10

C. 0

D. Runtime error

Question 68:

Which of the following is not a valid way to create an object in Java?

A. A obj = new A();

B. A obj = new A;

C. A obj;

obj = new A();

☒ D. A obj = A();

Question 69:

Which of the following statements is true about instance variables in Java?

A. They are declared inside a method.

B. They are shared among all instances of a class.

☒ C. They are declared inside a class but outside any method.

D. They cannot be initialized directly.

Question 70:

What is the purpose of the this keyword in Java?

A. To refer to the current class.

☒ B. To refer to the superclass.

C. To create a new object.

D. To refer to the current object.

Question 71:

Which keyword is used to inherit a class in Java?

A. implements

B. inherits

☒ C. extends

D. uses

Question 72:

Which of the following statements is true about inheritance in Java?

A. A class can inherit multiple classes.

☒ B. A subclass inherits all the members of the superclass except constructors.

C. A subclass can override private methods of the superclass.

D. Inheritance is achieved using the implements keyword.

Question 73:

What will be the output of the following code?

```
class A {  
    void display() {  
        System.out.println("Class A");  
    }  
}  
  
class B extends A {  
    void display() {  
        System.out.println("Class B");  
    }  
}
```

```
    }  
}  
  
public class Test {  
  
    public static void main(String[] args) {  
  
        B obj = new B();  
  
        obj.display();  
  
    }  
  
}
```

A. Class A

☒ B. Class B

C. Compilation error

D. Runtime error

Question 74:

Which of the following is a type of inheritance not supported in Java?

A. Single inheritance

☒ B. Multiple inheritance through classes

C. Multilevel inheritance

D. Hierarchical inheritance

Question 75:

What is the purpose of the super keyword in Java?

A. To create an object of the superclass.

B. To call the constructor of the superclass.

C. To access members of the superclass.

☒ D. Both B and C

Question 76:

What will be the output of the following code?

```
class A {  
    A() {  
        System.out.println("Constructor A");  
    }  
}  
  
class B extends A {  
    B() {  
        System.out.println("Constructor B");  
    }  
}  
  
public class Test {  
    public static void main(String[] args) {  
        B obj = new B();  
    }  
}
```

A. Constructor A

B. Constructor B

 C. Constructor A

Constructor B

D. Compilation error

Question 77:

Which of the following is not a benefit of inheritance?

A. Code reusability

B. Method overriding

☒ C. Multiple inheritance through classes

D. Ease of maintenance

Question 78:

What will be the output of the following code?

```
class A {  
    int x = 10;  
}  
  
class B extends A {  
    int x = 20;  
    void display() {  
        System.out.println(super.x);  
    }  
}  
  
public class Test {  
    public static void main(String[] args) {  
        B obj = new B();  
        obj.display();  
    }  
}
```

☒ A. 10

B. 20

C. 0

D. Compilation error

Question 79:

Which of the following is true about method overriding in Java?

- ☒ A. The method in the subclass must have the same name as the method in the superclass.
- ☐ B. The method in the subclass must have a different return type than the method in the superclass.
- ☐ C. The method in the subclass can have different parameters than the method in the superclass.
- ☐ D. The method in the subclass can be less accessible than the method in the superclass.

Question 80:

Which of the following statements is true about the instanceof operator in Java?

- ☒ A. It is used to check if an object is an instance of a class or interface.
- ☐ B. It is used to create an instance of a class.
- ☐ C. It is used to cast an object to a different type.
- ☐ D. It is used to compare two objects.

Question 81:

What is polymorphism in Java?

- ☐ A. The ability of a class to inherit properties from multiple classes.
- ☒ B. The ability of an object to take on many forms.
- ☐ C. The ability of a method to be static.
- ☐ D. The ability of a constructor to be overloaded.

Question 82:

Which of the following statements is true about method overloading in Java?

- ☐ A. Method overloading is a form of runtime polymorphism.
- ☒ B. Method overloading is a form of compile-time polymorphism.
- ☐ C. Method overloading requires methods to have the same parameter list.
- ☐ D. Method overloading is achieved using the extends keyword.

Question 83:

Which of the following is an example of runtime polymorphism in Java?

- A. Method overloading
- B. Constructor overloading
- C. Method overriding
- D. Operator overloading

Question 84:

What will be the output of the following code?

```
class A {  
    void display() {  
        System.out.println("Class A");  
    }  
}  
  
class B extends A {  
    void display() {  
        System.out.println("Class B");  
    }  
}  
  
public class Test {  
    public static void main(String[] args) {  
        A obj = new B();  
        obj.display();  
    }  
}
```

A. Class A

B. Class B

C. Compilation error

D. Runtime error

Question 85:

Which keyword is used to achieve dynamic method dispatch in Java?

A. this


B. super

 C. new

D. extends

Question 86:

Which of the following statements is true about interfaces in Java?

 A. An interface can have only abstract methods.

B. An interface can have concrete methods.

C. An interface can have both abstract and default methods.

D. An interface can have a constructor.

Question 87:

What will be the output of the following code?

```
interface A {  
    void display();  
}  
  
class B implements A {  
    public void display() {  
        System.out.println("Class B");  
    }  
}
```

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

A. Class A

☒ B. Class B

C. Compilation error

D. Runtime error

Question 88:

Which of the following statements is true about method overriding in Java?

☒ A. The method in the subclass must have the same return type as the method in the superclass.

B. The method in the subclass can have a different return type than the method in the superclass.

C. The method in the subclass can have different parameters than the method in the superclass.

D. The method in the subclass cannot be overridden.

Question 89:

What will be the output of the following code?

```
class A {  
  
    void display() {  
  
        System.out.println("Class A");  
  
    }  
  
}  
  
class B extends A {  
  
    void display() {
```

```
        System.out.println("Class B");
    }
}
class C extends B {
    void display() {
        System.out.println("Class C");
    }
}
public class Test {
    public static void main(String[] args) {
        A obj = new C();
        obj.display();
    }
}
```

- A. Class A
- B. Class B
- ☒ C. Class C
- D. Compilation error

Question 90:

Which of the following is a benefit of polymorphism in Java?

- A. It allows for code reusability.
- ☒ B. It simplifies code maintenance.
- C. It enhances the flexibility and extensibility of the code.
- D. All of the above

Question 91:

What is abstraction in Java?

- ☒ A. The process of hiding the implementation details and showing only functionality.
- ☐ B. The process of creating a class with multiple methods.
- ☐ C. The process of inheriting properties from multiple classes.
- ☐ D. The process of creating an object from a class.

Question 92:

Which of the following is true about abstract classes in Java?

- ☐ A. An abstract class can be instantiated.
- ☒ B. An abstract class can have both abstract and concrete methods.
- ☐ C. An abstract class cannot have constructors.
- ☐ D. An abstract class can only have abstract methods.

Question 93:

What will be the output of the following code?

```
abstract class A {  
    abstract void display();  
}  
  
class B extends A {  
    void display() {  
        System.out.println("Class B");  
    }  
}  
  
public class Test {
```



```
public static void main(String[] args) {  
    A obj = new B();  
    obj.display();  
}  
}
```

A. Compilation error

B. Runtime error

☒ C. Class B

D. No output

Question 94:

Which keyword is used to declare an abstract method in Java?

A. static

B. final

☒ C. abstract

D. public

Question 95:

Which of the following statements is true about interfaces in Java?

A. An interface can have instance variables.

B. An interface can have constructors.

☒ C. An interface can extend multiple interfaces.

D. An interface can implement another interface.

Question 96:

What will be the output of the following code?

```
interface A {  
    void display();
```

```
}  
  
class B implements A {  
    public void display() {  
        System.out.println("Class B");  
    }  
}  
  
public class Test {  
    public static void main(String[] args) {  
        A obj = new B();  
        obj.display();  
    }  
}
```

A. Compilation error

B. Runtime error

☒ C. Class B

D. No output

Question 97:

Which of the following is not allowed in a Java interface?

A. Default methods

B. Static methods

☒ C. Private methods

D. Constructor

Question 98:

What is the purpose of the default keyword in a Java interface?

☒ A. To declare a default method that can be overridden by implementing classes.

- B. To declare a default variable.
- C. To create a default constructor.
- D. To declare a default class.

Question 99:

What will be the output of the following code?

```
interface A {  
    default void display() {  
        System.out.println("Interface A");  
    }  
}  
  
class B implements A {  
    public void display() {  
        System.out.println("Class B");  
    }  
}  
  
public class Test {  
    public static void main(String[] args) {  
        A obj = new B();  
        obj.display();  
    }  
}
```

A. Interface A

 B. Class B

C. Compilation error

D. No output

Question 100:

Which of the following statements is true about abstract classes and interfaces in Java?

- ☒ A. An abstract class can implement an interface.
- ☐ B. An interface can extend an abstract class.
- ☐ C. An abstract class cannot have instance variables.
- ☐ D. An interface cannot have abstract methods.

Question 101:

What is encapsulation in Java?

- ☒ A. The process of hiding the implementation details and showing only functionality.
- ☐ B. The process of creating a class with multiple methods.
- ☐ C. The process of inheriting properties from multiple classes.
- ☐ D. The process of creating an object from a class.

Question 102:

Which of the following concepts promotes encapsulation in Java?

- ☒ A. Access specifiers (public, private, protected)
- ☐ B. Inheritance
- ☐ C. Interfaces
- ☐ D. Abstract classes

Question 103:

Which access specifier restricts access the most in Java?

- ☐ A. public
- ☐ B. protected
- ☒ C. private

D. default (no specifier)

Question 104:

What is the purpose of using private access specifier for variables in Java?

- A. To make the variable accessible from any class.
- B. To make the variable accessible only within the same package.
- ☒ C. To make the variable accessible only within the same class.
- D. To make the variable accessible only within subclasses.

Question 105:

Which of the following is a benefit of encapsulation in Java?

- A. Code reusability
- ☒ B. Enhanced security
- C. Method overriding
- D. Multiple inheritance

Question 106:

What will be the output of the following code?

```
class A {  
    private int x = 10;  
    public int getX() {  
        return x;  
    }  
}  
  
public class Test {  
    public static void main(String[] args) {  
        A obj = new A();
```

```
        System.out.println(obj.getX());  
    }  
}
```

A. Compilation error

B. 0

☒ C. 10

D. Runtime error

Question 107:

Which of the following statements is true about encapsulation?

A. Encapsulation is achieved by making all methods public.

B. Encapsulation allows the internal state of an object to be accessed directly.

☒ C. Encapsulation helps in achieving data hiding and abstraction.

D. Encapsulation is primarily used for code optimization.

Question 108:

Which of the following is an example of encapsulation in Java?

☒ A. Using private variables and public methods

B. Inheriting from multiple classes

C. Declaring variables as static

D. Using interfaces

Question 109:

What is the role of getter and setter methods in encapsulation?

A. Getter methods are used to set the value of variables.

☒ B. Setter methods are used to get the value of variables.

C. Getter methods are used to access private variables.

D. Setter methods are used to declare variables.

Question 110:

Which of the following is not an advantage of encapsulation?

- A. Improved flexibility
- B. Improved code maintainability
- C. Enhanced security
- ☒ D. Decreased modularity

Question 111:

Which access modifier restricts access the least in Java?

- A. private
- B. protected
- ☒ C. public
- D. default (no modifier)

Question 112:

Which of the following is true about the private access modifier in Java?

- ☒ A. It allows access only within the same class.
- B. It allows access within the same package.
- C. It allows access within subclasses and classes in the same package.
- D. It allows access from any class in the Java Virtual Machine (JVM).

Question 113:

Which access modifier is used when no modifier is specified in Java?

- A. private
- B. protected
- C. public

☒ D. default (package-private)

Question 114:

What is the default access modifier for variables and methods in Java classes?

A. private

B. protected

C. public

☒ D. default (package-private)

Question 115:

Which of the following is true about the protected access modifier in Java?

A. It allows access only within the same class.

B. It allows access within the same package.

☒ C. It allows access within subclasses and classes in the same package.

D. It allows access from any class in the Java Virtual Machine (JVM).

Question 116:

What will be the output of the following code?

```
package com.example;
```

```
class A {
```

```
    protected int x = 10;
```

```
}
```

```
public class Test {
```

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

```
        A obj = new A();
```

```
        System.out.println(obj.x);
```

```
}
```


}

A. Compilation error

B. 0

C. 10

D. Runtime error

Question 117:

Which access modifier is used to restrict access within the same package and subclasses?

A. private

✓ B. protected

C. public

D. default (package-private)

Question 118:

What will be the output of the following code?

```
public class A {
```

```
    private int x = 10;
```

```
}
```

```
class B extends A {
```

```
    public void display() {
```

```
        System.out.println(x);
```

```
    }
```

```
}
```

```
public class Test {
```

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

```
        B obj = new B();
```

```
        obj.display();
```

```
}  
  
}
```

☒ A. Compilation error

B. 0

C. 10

D. Runtime error

Question 119:

Which access modifier allows a variable or method to be accessed from any class in the Java Virtual Machine (JVM)?

A. private

B. protected

☒ C. public

D. default (package-private)

Question 120:

Which of the following is true about the default (package-private) access modifier in Java?

A. It allows access only within the same class.

☒ B. It allows access within the same package.

C. It allows access within subclasses and classes in the same package.

D. It allows access from any class in the Java Virtual Machine (JVM).

121. What is an array in Java?

☒ A. A collection of variables of the same type

B. A data structure that stores elements of different types

C. A predefined class in Java for storing data

D. A reserved keyword in Java

122. How do you declare an array in Java?

A. array[] arr;

☒ B. `int arr[];`

C. `arr int[];`

D. `Array arr[];`

123. What is the length of an array in Java?

☒ A. It is the total number of elements in the array.

B. It is the capacity of the array.

C. It is the maximum number of elements that can be stored in the array.

D. It is the number of dimensions of the array.

124. Which of the following is true about the default values of array elements in Java?

☒ A. They are null for reference types and 0 for numeric types.

B. They are always 0.

C. They are null for all types.

D. They are 0 for numeric types and false for boolean types.

125. How can you initialize an array in Java?

A. `int arr[5] = {1, 2, 3, 4, 5};`

B. `int[] arr = new int[5] {1, 2, 3, 4, 5};`

☒ C. `int[] arr = {1, 2, 3, 4, 5};`

D. `int arr[5] = new int[] {1, 2, 3, 4, 5};`

126. How do you access the elements of an array in Java?

A. By using the dot operator (`.`).

B. By using the arrow operator (`->`).

☒ C. By using the index of the element enclosed in square brackets (`[]`).

D. By using the asterisk operator (`*`).

127. What happens if you try to access an index that is out of the bounds of the array in Java?

A. It returns null.

B. It throws a NullPointerException.

☒ C. It throws an ArrayIndexOutOfBoundsException.

D. It returns the default value of the array type.

128. Which of the following statements is true about multidimensional arrays in Java?

A. All dimensions must be of the same size.

☒ B. Elements are stored in a contiguous memory location.

C. They cannot have more than two dimensions.

D. They cannot store primitive types.

129. How do you find the length of the second dimension of a two-dimensional array arr in Java?

A. arr.length;

☒ B. arr[1].length;

C. arr[2].length;

D. arr.size();

130. What is the correct way to pass an array as an argument to a method in Java?

A. void method(int arr[]) { ... }

☒ B. void method(int[] arr) { ... }

C. void method(arr[]) { ... }

D. void method(arr) { ... }

131. Which of the following is a valid way to declare a string in Java?

A. String str = 'Hello';

☒ B. String str = new String("Hello");

C. String str = Hello;

D. String str = (Hello);

132. How do you find the length of a string in Java?

A. str.size()

☒ B. `str.length()`

C. `str.len()`

D. `str.length`

133. What is the output of `str.substring(1, 3)` if `str = "Hello"`?

A. "He"

☒ B. "el"

C. "ll"

D. "lo"

134. Which of the following methods can be used to compare two strings in Java?

A. `==`

☒ B. `equals()`

C. `compare()`

D. `strcmpare()`

135. What is the result of the following code?

```
String str1 = "Hello";
```

```
String str2 = "Hello";
```

```
System.out.println(str1 == str2);
```

☒ A. true

B. false

C. Compilation Error

D. Runtime Error

136. What is the result of the following code?

```
String str1 = new String("Hello");
```

```
String str2 = new String("Hello");
```

```
System.out.println(str1 == str2);
```

A. true

☒ B. false

C. Compilation Error

D. Runtime Error

137. How do you convert a string to uppercase in Java?

A. str.toUpperCase()

☒ B. str.upper()

C. str.toUpperCase()

D. str.toUppercase()

138. How do you concatenate two strings in Java?

A. str1 + str2

B. str1.concat(str2)

C. str1.append(str2)

☒ D. Both A and B

139. What does the trim() method do in Java?

A. Removes all spaces from the string

☒ B. Removes leading and trailing spaces from the string

C. Removes trailing spaces from the string

D. Converts all characters to lowercase

140. Which method is used to find the first occurrence of a character in a string?

☒ A. indexOf()

B. firstIndex()

C. charAt()

D. findIndex()

141. What is the superclass of all exceptions in Java?

☒ A. Throwable

B. Exception

C. Error

D. RuntimeException

142. Which of the following is an unchecked exception?

A. IOException

B. SQLException

☒ C. NullPointerException

D. ClassNotFoundException

143. Which keyword is used to handle exceptions in Java?

☒ A. try

B. catch

C. throw

D. finally

144. What will happen if an exception is not caught in a program?

A. The program will terminate normally.

B. The program will run indefinitely.

☒ C. The program will terminate abnormally.

D. The program will ignore the exception and continue.

145. Which block can be used to perform cleanup operations after an exception is thrown?

A. try

B. catch

☒ C. throw

☐ D. finally

146. What is the correct order of blocks when handling exceptions in Java?

☒ A. try, catch, finally

☐ B. try, finally, catch

☐ C. catch, try, finally

☐ D. catch, finally, try

147. Which of the following exceptions is thrown when an array is accessed with an illegal index?

☒ A. IllegalArgumentException

☐ B. ArrayIndexOutOfBoundsException

☐ C. IndexOutOfBoundsException

☐ D. ArithmeticException

148. Which statement is true about the finally block?

☐ A. It is executed only if an exception is thrown.

☐ B. It is executed only if no exception is thrown.

☒ C. It is executed whether an exception is thrown or not.

☐ D. It is executed before the catch block.

149. How do you create a custom exception in Java?

☒ A. Extend the Exception class

☐ B. Implement the Throwable interface

☐ C. Extend the Throwable class

☐ D. Implement the Exception interface

150. Which of the following is true about the throws keyword?

☒ A. It is used to throw an exception.

☐ B. It is used to declare that a method can throw an exception.

- C. It is used to catch an exception.
- D. It is used to handle an exception.

151. Which interface must be implemented by a class to create a new thread?

- ☒ A. Runnable
- B. Threadable
- C. Callable
- D. Executable

152. Which method is used to start a thread execution?

- A. run()
- ☒ B. start()
- C. init()
- D. execute()

153. Which of the following is not a valid state of a thread?

- A. New
- B. Runnable
- ☒ C. Running
- D. Blocked

154. What will happen if we directly call the run() method instead of start() on a thread object?

- A. The new thread will start.
- ☒ B. The code inside run() will be executed in the current thread.
- C. It will throw an exception.
- D. The thread will be in waiting state.

155. Which of the following is used to obtain a lock on an object?

- ☒ A. synchronized block
- B. lock() method

- C. wait() method
- D. notify() method

156. Which method is used to make a thread wait until another thread completes its execution?

- A. wait()
- B. notify()
- C. sleep()
- ☒ D. join()

157. What does the yield() method do?

- A. Terminates the thread.
- B. Pauses the thread for a specific time.
- ☒ C. Causes the currently executing thread object to temporarily pause and allow other threads to execute.
- D. Stops the thread.

158. Which of the following is true about the sleep() method?

- A. It releases the lock on the object.
- ☒ B. It does not release the lock on the object.
- C. It terminates the thread.
- D. It can only be called on synchronized methods.

159. Which exception is thrown when a thread is waiting, sleeping, or doing some processing, and it is interrupted?

- ☒ A. InterruptedException
- B. ThreadInterruptedException
- C. ThreadException
- D. IllegalThreadStateException

160. Which of the following is true about thread priority?

A. Thread priority cannot be changed once the thread is created.

☒ B. Thread priority can be changed using the setPriority() method.

C. All threads have the same priority by default.

D. Thread priority is set to the highest value by default.

161. Which of the following is not a part of the Java Collections Framework?

A. ArrayList

B. HashMap

☒ C. Hashtable

D. Vector

162. Which interface provides the basic operations for managing a collection of elements?

A. Set

B. List

☒ C. Collection

D. Map

163. Which class is synchronized in the Java Collections Framework?

A. ArrayList

B. HashMap

☒ C. Vector

D. HashSet

164. Which method is used to add an element to a specific position in an ArrayList?

A. addElement()

☒ B. add()

C. insert()

D. put()

165. Which collection class allows you to store key-value pairs and access them by key?

A. Set

B. List

☒ C. Map

D. Queue

166. What is the default initial capacity of an ArrayList?

A. 8

☒ B. 10

C. 16

D. 20

167. Which method is used to remove all elements from a collection?

A. deleteAll()

B. clear()

☒ C. removeAll()

D. empty()

168. Which of the following classes implements the Queue interface?

A. ArrayList

B. HashSet

C. LinkedList

☒ D. TreeMap

169. How can you iterate over a HashSet?

A. Using a for loop

☒ B. Using an iterator

C. Using a for-each loop

D. All of the above

170. What does the peek() method do in a queue?

- ☐ A. Removes and returns the head of the queue
- ☒ B. Returns the head of the queue without removing it
- ☐ C. Returns the last element of the queue
- ☐ D. Clears the queue

171. Which of the following classes is a part of the Java Collections Framework but is not synchronized?

- ☒ A. HashSet
- ☐ B. Vector
- ☐ C. Hashtable
- ☐ D. Stack

172. Which of the following methods is used to obtain the number of elements in a collection?

- ☒ A. size()
- ☐ B. length()
- ☐ C. count()
- ☐ D. capacity()

173. What is the time complexity of the get() method in an ArrayList?

- ☒ A. $O(1)$
- ☐ B. $O(n)$
- ☐ C. $O(\log n)$
- ☐ D. $O(n^2)$

174. Which collection class maintains the order of insertion?

- ☐ A. HashSet
- ☐ B. TreeSet
- ☒ C. LinkedHashMap
- ☐ D. PriorityQueue

175. Which of the following classes provides a resizable array and is not synchronized?

☒ A. ArrayList

B. Vector

C. LinkedList

D. HashSet

176. Which of the following is a valid declaration of a generic HashMap in Java?

A. `HashMap<K, V> map = new HashMap<>();`

B. `HashMap<key, value> map = new HashMap<>();`

☒ C. `HashMap<K, V> map = new HashMap<K, V>();`

D. `HashMap<Key, Value> map = new HashMap<>();`

177. Which method is used to check if a collection is empty?

A. `isNull()`

☒ B. `isEmpty()`

C. `size() == 0`

D. `clear()`

178. What is the difference between HashMap and TreeMap?

A. ~~HashMap is synchronized, TreeMap is not~~

☒ B. TreeMap maintains order, HashMap does not

C. HashMap is a part of Java Collections Framework, TreeMap is not

D. TreeMap is faster than HashMap

179. Which interface does EnumSet implement?

☒ A. Set

B. List

C. Map

D. Queue

180. Which method is used to remove a specific element from a HashSet?

A. delete()

☒ B. remove()

C. discard()

D. clear()

181. Which of the following is a new feature introduced in Java 8?

A. Generics

☒ B. Lambda Expressions

C. Annotations

D. Enums

182. What is the purpose of the default keyword in interfaces in Java 8?

☒ A. To provide a default implementation for a method

B. To declare a method as abstract

C. To mark a method for overriding

D. To indicate that a method should not be overridden

183. Which new interface in Java 8 allows us to work with collections in a functional style?

A. Collection

☒ B. Stream

C. List

D. Map

184. What is the purpose of the Optional class introduced in Java 8?

A. To handle optional arguments in methods

☒ B. To provide a container that may or may not contain a non-null value

C. To create optional loops in functional programming

D. To support optional interfaces

185. Which method in the Stream interface is used to filter elements based on a given predicate?

☒ A. filter()

B. map()

C. reduce()

D. collect()

186. How can you create a Stream from a collection in Java 8?

A. Stream.of(collection)

☒ B. collection.stream()

C. new Stream(collection)

D. Stream.create(collection)

187. Which functional interface in Java 8 has a method with no arguments and returns a value?

A. Consumer

B. Supplier

☒ C. Function

D. Predicate

188. What is the return type of the map method in the Stream interface?

A. List

B. Set

☒ C. Stream

D. Collection

189. Which new date and time API was introduced in Java 8?

☒ A. java.util.Date

B. java.util.Calendar

C. java.time

D. java.util.TimeZone

190. Which annotation can be used to repeat annotations in Java 8?

☒ A. @Repeatable

B. @Repeated

C. @Repetitive

D. @Multiple

191. Which class is used to represent a compiled regular expression in Java?

☒ A. Pattern

B. Matcher

C. Regex

D. Compiler

192. Which method in the Pattern class is used to compile a regular expression?

☒ A. compile()

B. matcher()

C. pattern()

D. regex()

193. What does the matches() method in the Matcher class do?

☒ A. Returns true if the entire region matches the pattern

B. Returns true if any subsequence of the input sequence matches the pattern

C. Returns true if the pattern is found at the beginning of the input sequence

D. Returns true if the pattern is found at the end of the input sequence

194. Which of the following regular expression patterns matches any digit?

A. \d

B. \D

☒ C. \w

D. \W

195. How do you create a Matcher object from a Pattern?

A. `Pattern.createMatcher(CharSequence)`

☒ B. `Pattern.compile(CharSequence)`

C. `Pattern.matcher(CharSequence)`

D. `Pattern.find(CharSequence)`

196. Which method in the `Matcher` class is used to find the next subsequence of the input sequence that matches the pattern?

☒ A. `matches()`

B. `find()`

C. `lookingAt()`

D. `next()`

197. What does the regular expression `^abc` match?

A. abc at the beginning of a line

B. abc at the end of a line

☒ C. abc anywhere in the line

D. Any line that does not contain abc

198. Which of the following is a greedy quantifier in regular expressions?

A. `?`

B. `+`

☒ C. `*`

D. `*?`

199. What does the regular expression `a{2,4}` match?

A. Exactly two a characters

B. Exactly four a characters

☒ C. Between two and four a characters

D. At least two a characters

200. Which method is used to replace all occurrences of a pattern in the input sequence with a replacement string?

 A. `replaceAll()`

B. `replaceFirst()`

C. `substituteAll()`

D. `substituteFirst()`

