

MCQ's in JAVA

1. Which of the following is not a Java feature?

- a) Object-oriented
- b) Portable
- c) Dynamic
- d) Compiler-dependent

Answer: d) Compiler-dependent

Explanation: Java is designed to be platform-independent, meaning that it can run on any machine that has a Java Virtual Machine (JVM), making it compiler-independent.

2. Which of the following is the correct declaration of the main method in Java?

- a) `public static void main(String[] args)`
- b) `public void static main(String[] args)`
- c) `static public void main(String args[])`
- d) `public void main(String[] args)`

Answer: a) `public static void main(String[] args)`

Explanation: The correct syntax for the main method in Java is `public static void main(String[] args)`, which serves as the entry point for the program.

3. Which data type is used to create a variable that should store text?

- a) `myString`
- b) `String`
- c) `Txt`
- d) `Text`

Answer: b) `String`

Explanation: In Java, `String` is a class used to create objects that represent sequences of characters (text).

4. What is the size of an int data type in Java?

- a) 16 bits
- b) 32 bits
- c) 64 bits
- d) 128 bits

Answer: b) 32 bits

Explanation: In Java, the int data type is a 32-bit signed two's complement integer.

5. Which of these is a valid keyword in Java?

- a) interface
- b) string
- c) Float
- d) unsigned

Answer: a) interface

Explanation: interface is a valid keyword in Java used to declare an interface. Java does not have keywords like string (it's a class), Float (which is a class), or unsigned (Java doesn't support unsigned types except for char and byte).

6. Which of these access modifiers makes a variable accessible from any class?

- a) private
- b) protected
- c) public
- d) default

Answer: c) public

Explanation: The public access modifier allows a variable or method to be accessible from any other class.

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

- a) true
- b) false

- c) 0
- d) null

Answer: b) false

Explanation: By default, a boolean variable in Java is initialized to false.

8. Which of the following is not a type of loop in Java?

- a) for
- b) while
- c) do-while
- d) repeat-until

Answer: d) repeat-until

Explanation: repeat-until is not a loop structure in Java. Java supports for, while, and do-while loops.

9. Which method is used to compare two strings in Java for equality?

- a) ==
- b) equals()
- c) compareTo()
- d) compare()

Answer: b) equals()

Explanation: The equals() method compares the contents of two strings, while == compares object references.

10. What is the superclass of all classes in Java?

- a) Object
- b) Class
- c) Super
- d) System

Answer: a) Object

Explanation: The Object class is the superclass of all classes in Java. Every class is implicitly a subclass of Object.

11. Which of the following is used to find and fix bugs in a Java program?

- a) JVM
- b) JRE
- c) JDK
- d) JDB

Answer: d) JDB

Explanation: JDB (Java Debugger) is a tool used to debug Java programs.

12. What is the return type of the hashCode() method in Java?

- a) int
- b) long
- c) float
- d) double

Answer: a) int

Explanation: The hashCode() method in Java returns a 32-bit signed integer that represents the hash code of the object.

13. Which package contains the String class?

- a) java.util
- b) java.lang
- c) java.io
- d) java.awt

Answer: b) java.lang

Explanation: The String class is a part of the java.lang package, which is automatically imported into all Java programs.

14. What is the output of 5 + 2 + "Hello" in Java?

- a) 7Hello
- b) 52Hello

- c) Hello52
- d) Error

Answer: a) 7Hello

Explanation: Java evaluates $5 + 2$ first, resulting in 7. Then, "Hello" is concatenated, resulting in 7Hello.

15. Which of the following is not an OOP concept in Java?

- a) Polymorphism
- b) Inheritance
- c) Encapsulation
- d) Compilation

Answer: d) Compilation

Explanation: Compilation is not a concept of Object-Oriented Programming (OOP). OOP focuses on encapsulation, inheritance, and polymorphism.

16. What is the valid range of byte data type in Java?

- a) -128 to 127
- b) 0 to 255
- c) -256 to 255
- d) -128 to 128

Answer: a) -128 to 127

Explanation: The byte data type in Java is an 8-bit signed integer, with a range of -128 to 127.

17. Which keyword is used to prevent a class from being subclassed?

- a) static
- b) final
- c) abstract
- d) protected

Answer: b) final

Explanation: A final class in Java cannot be subclassed, ensuring no other class can extend it.

18. Which of the following operators is used for bitwise AND in Java?

- a) &
- b) |
- c) ^
- d) &&

Answer: a) &

Explanation: The & operator performs a bitwise AND operation. The && operator is used for logical AND.

19. Which keyword is used to inherit a class in Java?

- a) implements
- b) extends
- c) inherits
- d) super

Answer: b) extends

Explanation: The extends keyword is used to create a subclass or inherit from another class in Java.

20. What will happen if a class doesn't have a main() method in Java?

- a) The program will run normally
- b) The program will compile but not run
- c) It will throw a runtime error
- d) It will throw a compile-time error

Answer: b) The program will compile but not run

Explanation: A Java program will compile without a main() method, but it cannot run because the JVM requires the main() method to start execution.

21. Which method is called when an object is created in Java?

- a) finalize()
- b) init()

- c) constructor
- d) start()

Answer: c) constructor

Explanation: A constructor is a special method that is called when an object is instantiated in Java.

22. Which of the following is a valid declaration of an array in Java?

- a) `int[] arr = new int[5];`
- b) `int arr[] = new int[5];`
- c) `int arr[] = {1, 2, 3};`
- d) All of the above

Answer: d) All of the above

Explanation: All these are valid ways to declare and initialize an array in Java.

23. Which operator is used to test if an object is of a particular type?

- a) `instanceof`
- b) `type`
- c) `cast`
- d) `as`

Answer: a) `instanceof`

Explanation: The `instanceof` operator is used to test whether an object is an instance of a particular class or interface.

24. What is the default value of a reference variable in Java?

- a) 0
- b) null
- c) undefined
- d) empty

Answer: b) null

Explanation: Reference variables in Java are initialized to null by default when declared as instance variables.

25. Which method must be implemented by all threads in Java?

- a) run()
- b) start()
- c) stop()
- d) wait()

Answer: a) run()

Explanation: The run() method must be implemented when creating a thread in Java, as it contains the code to be executed in the thread.

26. What does the keyword super refer to in Java?

- a) The parent class object
- b) The current class object
- c) The grandparent class
- d) A static method

Answer: a) The parent class object

Explanation: The super keyword refers to the parent class and is used to access parent class methods and constructors.

27. Which exception is thrown when a thread is waiting for a resource and is interrupted?

- a) IOException
- b) InterruptedException
- c) ArithmeticException
- d) NullPointerException

Answer: b) InterruptedException

Explanation: An InterruptedException is thrown when a thread that is waiting or sleeping is interrupted.

28. Which collection class allows you to grow or shrink its size and provides indexed access to its elements?

- a) HashSet
- b) ArrayList

- c) LinkedList
- d) TreeSet

Answer: b) ArrayList

Explanation: ArrayList allows dynamic resizing and provides indexed access to elements.

29. What is the use of the finalize() method in Java?

- a) It is used to clean up resources before an object is garbage collected
- b) It is used to initialize an object
- c) It is used to set an object as immutable
- d) It is used to override methods

Answer: a) It is used to clean up resources before an object is garbage collected

Explanation: The finalize() method is called before the object is garbage collected, giving an opportunity to clean up resources.

30. Which keyword is used in Java to create an interface?

- a) class
- b) interface
- c) implements
- d) extends

Answer: b) interface

Explanation: The interface keyword is used to define an interface in Java.

31. Which of the following keywords is used to define a constant in Java?

- a) const
- b) final
- c) static
- d) immutable

Answer: b) final

Explanation: The final keyword is used to declare constants in Java, meaning the value cannot be changed once assigned.

32. Which of these is a valid declaration of a two-dimensional array in Java?

- a) `int[][] arr = new int[5][5];`
- b) `int arr[][] = new int[5][5];`
- c) `int[] arr[] = new int[5][5];`
- d) All of the above

Answer: d) All of the above

Explanation: All options are valid ways to declare a two-dimensional array in Java.

33. What will be the output of the following code? `System.out.println(10 + 20 + "Java");`

- a) 30Java
- b) 1020Java
- c) Java30
- d) Java1020

Answer: a) 30Java

Explanation: The expression evaluates `10 + 20` first, resulting in 30, then concatenates with the string "Java", resulting in 30Java.

34. Which of the following classes are part of the Java Collections Framework?

- a) ArrayList
- b) HashMap
- c) LinkedList
- d) All of the above

Answer: d) All of the above

Explanation: ArrayList, HashMap, and LinkedList are all part of the Java Collections Framework.

35. Which exception is thrown when an attempt is made to access an array with an illegal index?

- a) ArrayStoreException
- b) IndexOutOfBoundsException
- c) NullPointerException
- d) IllegalArgumentException

Answer: b) IndexOutOfBoundsException

Explanation: The IndexOutOfBoundsException is thrown when an invalid index is used to access an array.

36. What does the this keyword refer to in Java?

- a) The current class
- b) The current object
- c) The superclass
- d) The static context

Answer: b) The current object

Explanation: The this keyword refers to the current instance of the class, allowing access to its fields and methods.

37. Which of the following methods is used to convert a string to an integer in Java?

- a) Integer.parseInt()
- b) String.toInt()
- c) Integer.valueOf()
- d) Both a and c

Answer: d) Both a and c

Explanation: Both Integer.parseInt() and Integer.valueOf() can be used to convert a string to an integer.

38. What will be the output of the following code? System.out.println(5 == 5 ? "True" : "False");

- a) True
- b) False

- c) Error
- d) 5

Answer: a) True

Explanation: The ternary operator evaluates the condition `5 == 5` as true, resulting in the output True.

39. Which of the following statements is used to exit from a loop in Java?

- a) break
- b) continue
- c) exit
- d) stop

Answer: a) break

Explanation: The break statement is used to exit a loop prematurely.

40. What is the default access modifier for classes in Java?

- a) public
- b) protected
- c) private
- d) default (package-private)

Answer: d) default (package-private)

Explanation: If no access modifier is specified, the class has package-private access by default, meaning it is accessible within the same package.

41. Which of the following is used to declare an abstract class in Java?

- a) `abstract class ClassName {}`
- b) `ClassName abstract {}`
- c) `class ClassName abstract {}`
- d) `abstract ClassName {}`

Answer: a) `abstract class ClassName {}`

Explanation: The correct syntax to declare an abstract class in Java is `abstract class ClassName {}`.

42. Which of these methods is called when an object is being serialized?

- a) writeObject()
- b) readObject()
- c) finalize()
- d) serialize()

Answer: a) writeObject()

Explanation: The writeObject() method is called when an object is being serialized in Java.

43. Which operator is used to handle exceptions in Java?

- a) try-catch
- b) throw
- c) throws
- d) finally

Answer: a) try-catch

Explanation: The try-catch block is used to handle exceptions in Java.

44. Which of the following is not a valid way to create a thread in Java?

- a) Extending the Thread class
- b) Implementing the Runnable interface
- c) Using a Callable interface
- d) Inheriting from the Object class

Answer: d) Inheriting from the Object class

Explanation: Inheriting from the Object class does not create a thread. A thread can be created by extending Thread or implementing Runnable or Callable.

45. What is the purpose of the volatile keyword in Java?

- a) To ensure that a variable is only accessible by one thread
- b) To indicate that a variable's value may be changed by different threads

- c) To optimize the performance of the variable
- d) To prevent a variable from being serialized

Answer: b) To indicate that a variable's value may be changed by different threads

Explanation: The volatile keyword ensures that the variable's value is always read from the main memory and not from the thread's local cache.

46. Which of the following interfaces does Collection interface extend?

- a) List
- b) Iterable
- c) Set
- d) Map

Answer: b) Iterable

Explanation: The Collection interface extends the Iterable interface, which allows the collection to be iterated.

47. Which keyword is used to implement an interface in Java?

- a) implements
- b) interface
- c) extends
- d) inherit

Answer: a) implements

Explanation: The implements keyword is used by a class to implement an interface.

48. What is the result of compiling and executing the following code? String s = "Java"; s.concat("Programming"); System.out.println(s);

- a) Java
- b) JavaProgramming
- c) Error
- d) null

Answer: a) Java

Explanation: Strings in Java are immutable. The concat method does not modify the original string; therefore, s remains Java.

49. Which of the following is a wrapper class for primitive data type int?

- a) Integer
- b) IntWrapper
- c) intValue
- d) Int

Answer: a) Integer

Explanation: The Integer class is a wrapper class that wraps the primitive data type int.

50. Which of the following statements is true about an interface in Java?

- a) An interface can contain concrete methods.
- b) An interface can extend another interface.
- c) An interface cannot be instantiated.
- d) Both b and c

Answer: d) Both b and c

Explanation: An interface can extend another interface and cannot be instantiated directly.

51. What is the output of the following code snippet?

System.out.println("Hello" + null);

- a) Hello
- b) null
- c) Hellonull
- d) Error

Answer: c) Hellonull

Explanation: The string concatenation operator converts null to the string "null", resulting in Hellonull.

52. Which of the following will not compile?

- a) `int x = 10;`
- b) `double d = x;`
- c) `int x = 10.5;`
- d) `float f = 5.5f;`

Answer: c) `int x = 10.5;`

Explanation: Assigning a decimal value (10.5) to an int type variable will not compile without explicit casting.

53. What is the scope of a local variable in Java?

- a) Within the method in which it is declared
- b) Throughout the class
- c) In all subclasses
- d) None of the above

Answer: a) Within the method in which it is declared

Explanation: Local variables are only accessible within the method or block in which they are declared.

54. Which keyword is used to call the parent class constructor in Java?

- a) `this`
- b) `super`
- c) `parent`
- d) `base`

Answer: b) `super`

Explanation: The `super` keyword is used to call the parent class constructor.

55. Which of the following statements is true about the main method in Java?

- a) It can be overloaded.
- b) It must return a value.
- c) It is called by the JVM automatically.
- d) Both a and c

Answer: d) Both a and c

Explanation: The main method can be overloaded, and it is called by the JVM when the program starts.

56. What is the output of the following code? `System.out.println(10 / 4);`

- a) 2.5
- b) 2
- c) 2.0
- d) 4

Answer: b) 2

Explanation: Integer division truncates the decimal, so $10 / 4$ results in 2.

57. Which of the following is a valid declaration of a string in Java?

- a) `String s = "Hello";`
- b) `string s = "Hello";`
- c) `String s = new String("Hello");`
- d) Both a and c

Answer: d) Both a and c

Explanation: Both `String s = "Hello";` and `String s = new String("Hello");` are valid ways to declare a string in Java.

58. Which collection class is used to store key-value pairs?

- a) List
- b) Set
- c) Map
- d) ArrayList

Answer: c) Map

Explanation: The Map interface in Java is used to store key-value pairs, where each key maps to a value.

59. What does the instanceof operator check?

- a) If a variable is null
- b) If an object is of a specific type
- c) The equality of two objects
- d) The length of an array

Answer: b) If an object is of a specific type

Explanation: The instanceof operator checks if an object is an instance of a specified class or interface.

60. Which of the following is a feature of Java?

- a) Platform-dependent
- b) High performance
- c) Low security
- d) None of the above

Answer: b) High performance

Explanation: Java is designed to be high performance through just-in-time compilation and optimization, while it is platform-independent and offers high security features.