### **Java Basics & History**

1. What is Java primarily known as?
   1. A scripting language
   2. An object-oriented language
   3. A markup language
   4. A procedural language
2. Who developed Java?
   1. Bill Gates
   2. James Gosling
   3. Tim Berners-Lee
   4. Linus Torvalds
3. What was Java’s original name?
   1. C++
   2. Oak
   3. Python
   4. Ruby
4. When was Java first released?
   1. 1991
   2. 1995
   3. 2000
   4. 2005
5. Which company originally developed Java?
   1. Microsoft
   2. Sun Microsystems
   3. Oracle
   4. IBM
6. What does “write once, run anywhere” (WORA) mean?
   1. Code runs on any device with a JVM
   2. Code can be modified without recompiling
   3. Code is open-source
   4. Code runs in any text editor
7. What is the file extension for Java source files?
   1. .class
   2. .java
   3. .jar
   4. .jpe
8. Which Java feature prevents multiple inheritance?
   1. Interfaces
   2. Abstract classes
   3. Inner classes
   4. Packages
9. What is the default value of a boolean?
   1. true
   2. false
   3. 0
   4. null
10. Which Java version introduced generics?
    1. Java 1.0
    2. Java 1.5
    3. Java 2
    4. Java 8

### **JDK, JVM, & JRE**

1. What does JDK stand for?
   1. Java Development Kit
   2. Java Debugging Kit
   3. Java Deployment Kit
   4. Java Documentation Kit
2. What is the primary role of the JVM?
   1. Execute Java bytecode
   2. Compile Java code
   3. Manage user input
   4. Handle network connections
3. Which component is included in the JRE but not the JDK?
   1. Java Compiler
   2. Java Debugger
   3. Java API Documentation
   4. Java Virtual Machine
4. What does JRE stand for?
   1. Java Runtime Environment
   2. Java Runtime Executor
   3. Java Runtime Engine
   4. Java Runtime Extension
5. Which tool converts Java bytecode to machine code?
   1. JVM
   2. JRE
   3. JDK
   4. JAR
6. What does the Java Compiler (javac) produce?
   1. .class files
   2. .java files
   3. .exe files
   4. .jar files
7. Which of the following is **not** part of the JDK?
   1. Javadoc
   2. Java Debugger
   3. Java Virtual Machine
   4. Java Runtime Environment
8. What is the role of the JIT (Just-In-Time) compiler?
   1. Compile source code to bytecode
   2. Optimize bytecode during execution
   3. Manage memory allocation
   4. Handle exceptions
9. What is the file format of compiled Java code?
   1. .class
   2. .java
   3. .exe
   4. .jar
10. What is the key difference between JDK and JRE?
    1. JDK includes development tools; JRE includes runtime environment
    2. JRE includes development tools; JDK includes runtime environment
    3. They are identical
    4. JDK is for running; JRE is for developing

### **Method Syntax (Static vs. Non-Static)**

1. Which keyword declares a static method?
   1. static
   2. method
   3. function
   4. void
2. Can a static method access non-static variables?
   1. Yes
   2. No
   3. Only with an instance
   4. Only if declared final
3. How do you call a static method?
   1. ClassName.methodName();
   2. objectName.methodName();
   3. Both a and b
   4. Neither
4. Which is a non-static method?
   1. public static void myMethod() {}
   2. public void myMethod() {}
   3. static public void myMethod() {}
   4. void static myMethod() {}
5. Can a non-static method be called without an instance?
   1. Yes
   2. No
   3. Only in the main method
   4. Only if it’s public
6. What is the key difference between static and non-static methods?
   1. Static methods can’t be overridden
   2. Non-static methods belong to the class
   3. Static methods can access instance variables
   4. Non-static methods require an object instance
7. Which is a valid static method declaration?
   1. void myStaticMethod() {}
   2. static void myStaticMethod() {}
   3. static myStaticMethod() {}
   4. void static myStaticMethod() {}
8. Can a static method call a non-static method directly?
   1. Yes
   2. No
   3. Only if the non-static method is public
   4. Only within the same class
9. What does the static keyword do in a method?
   1. Indicates inheritance
   2. Makes the method belong to the class
   3. Prevents overriding
   4. Makes the method thread-safe
10. Which statement is true about static methods?
    1. They can access instance variables directly
    2. They can be overridden
    3. They are called using the class name
    4. They require an object to be created

### **Primitive Data Types**

1. Which is a primitive data type?
   1. String
   2. int
   3. Array
   4. Object
2. What is the default value of a boolean?
   1. true
   2. false
   3. 0
   4. null
3. How many bytes does a double occupy?
   1. 4
   2. 8
   3. 16
   4. 32
4. Which is a valid char value?
   1. "A"
   2. 'A'
   3. 65
   4. Both b and c
5. Which value cannot be stored in an int?
   1. -32768
   2. 100000
   3. 2147483648
   4. -2147483648
6. Which is **not** a primitive data type?
   1. float
   2. void
   3. char
   4. short
7. Which data type suits storing a price?
   1. int
   2. double
   3. boolean
   4. char
8. What is the default value of a char?
   1. 0
   2. '\0'
   3. ' '
   4. null
9. Which is immutable in Java?
   1. StringBuilder
   2. String
   3. int
   4. CharSequence
10. How many bits is the long data type?
    1. 32
    2. 16
    3. 64
    4. 128
11. Which is the smallest primitive data type?
    1. short
    2. int
    3. byte
    4. long
12. Which is the largest primitive data type?
    1. byte
    2. short
    3. int
    4. double
13. Which is a floating-point data type?
    1. char
    2. int
    3. float
    4. boolean
14. What can’t a char store?
    1. 'A'
    2. 65
    3. '\u0041'
    4. 0x0041
15. What is the size of an int?
    1. 1 byte
    2. 2 bytes
    3. 4 bytes
    4. 8 bytes
16. Which is a valid float declaration?
    1. float f = 5.5;
    2. float f = 5.5f;
    3. float f = (float)5.5;
    4. Both b and c
17. How many bytes does a double occupy?
    1. 4
    2. 8
    3. 16
    4. 32
18. What is the default value of a double?
    1. 0
    2. 0.0
    3. false
    4. null
19. Which is a valid byte assignment?
    1. byte b = 128;
    2. byte b = 'a';
    3. byte b = 9.9;
    4. byte b = false;
20. What is the range of a short?
    1. -32768 to 32767
    2. -2147483648 to 2147483647
    3. 0 to 65535
    4. -128 to 127