

1. Assertion: The this keyword in Java refers to the current instance of the class.
Reasoning: The this keyword is a reference to the current object on which a method is being invoked. It is used to avoid naming conflicts between class attributes and method parameters.
 - (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
2. Assertion: Abstraction is the process of exposing the implementation details of an object.
Reasoning: Abstraction allows you to focus on what an object does rather than how it does it. It helps in managing complexity.
 - (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
3. Assertion: Polymorphism allows an object to take on multiple forms.
Reasoning: In Java, polymorphism refers to the hiding the implementation details of an object exposing the only essential details to the user.
 - (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
4. Assertion: Inheritance allows a class to inherit the properties and behavior of another class.
Reasoning: Inheritance is a fundamental OOP concept that promotes code reusability by allow in gone class (subclass) to inherit the attributes and methods of another class (superclass).
 - (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion (A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
5. Assertion: Abstraction is the process of hiding the implementation details of an object and exposing only the relevant features. Reasoning: Abstraction allows you to focus on what an object does rather than how it does it. It helps in managing complexity.
 - (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true

6. Assertion: The static keyword in Java refers to the current instance of the class.
Reasoning: The static keyword is a reference to the current object on which a method is being invoked. It is used to avoid naming conflicts between class attributes and method parameters.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
7. Assertion: In Java, an object is a blueprint for creating class.
Reasoning: A class defines the properties (fields) and behaviours (methods) that its objects will have.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
8. Assertion: An object is an instance of a class.
Reasoning: When you create a class in Java using the new keyword, you are creating an instance of an object with its own unique set of attributes.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false.
 - (d) Assertion (A) is false and Reason (R) is true.
9. Assertion: Classes in Java can have multiple constructors.
Reasoning: All Constructors are defined with same parameter lists.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
10. Assertion: A static method in a class can be called without creating an instance of that class.
Reasoning: Static methods belong to the class rather than to any specific instance. They can be called using the class name.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false.
 - (d) Assertion (A) is false and Reason (R) is true.
11. Assertion: An array can store elements of different data types.
Reasoning: In Java, an array can only hold elements of the same data type. If you want to store different data types, you would need to use an array of objects.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true

12. Assertion: The index of the first element in an array is always 0..Reasoning: In Java, array indices are zero-based, meaning the first element is at index 0, the second element is at index 1, and so on.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
13. Assertion: In Java, an array is a fixed-size data structure that stores elements of the different datatype.
Reasoning: Arrays provide a contiguous block of memory to hold elements, and the size of an array is determined at the time of creation.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
14. Assertion : Loops allow for repeated execution of a block of code.
Reason : Loops provide a way to execute a specific block of code multiple times, saving time and effort compared to writing out the same code multiple times.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
15. Assertion : There are three main types of loops in Java: for, while, and do-while.
Reason: Each type of loop has its own use case. The for loop is useful when you know the number of iterations in advance. The while loop is suitable for situations where the condition for termination is known but the number of iterations may vary. The do-while loop ensures that the code block is executed at least once, regardless of the condition.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
16. Assertion : Loops cannot lead to infinite execution if not properly controlled.
Reason : If the condition for loop termination is not met, a loop can run indefinitely, causing the program to hang or crash. It's crucial to ensure that the loop condition is properly managed to prevent infinite execution.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true

17. Assertion : Nested loops allow for more complex iteration patterns.
Reason : Java allows loops to be nested within each other, which means that you can have one loop inside another. This is useful for handling multi-dimensional data structures or situations where you need to perform a series of operations within a loop.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
18. Assertion : Java is an object-oriented programming (OOP) language.
Reason 1: Java follows the principles of object-oriented programming, which emphasizes the organization of code around objects that represent real-world entities. This promotes modularity, reusability, and maintainability of code.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
19. Assertion : Encapsulation is a fundamental concept in Java.
Reason: Encapsulation involves bundling data (attributes) and methods (functions) that operate on the data within a single unit, known as a class. This allows for better control over access to data and ensures data integrity
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
20. Assertion : Inheritance allows for the creation of hierarchies of classes.
Reason : Inheritance enables a class (subclass) to inherit attributes and methods from another class(superclass). This promotes code reuse and allows for the creation of specialized classes that extend the behaviour of existing ones.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation ofAssertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
21. Assertion : Polymorphism is a key feature of Java.
Reason : Polymorphism allows objects to take on different forms or have multiple behaviours. This is achieved through method overloading and method overriding, enhancing flexibility in code designand execution.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion(A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true

22. Assertion : Abstraction helps in managing complexity.
Reason : Abstraction involves bundling data (attributes) and methods (functions) that operate on the data within a single unit, known as a class.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion (A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true
23. Assertion : Java is platform-independent due to its "write once, run anywhere" (WORA) philosophy.
Reason : Java bytecode, generated by the Java compiler, can be executed on any platform with a Java Virtual Machine (JVM). This allows Java programs to run on various operating systems without modification.
- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A)
 - (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not a correct explanation of Assertion (A)
 - (c) Assertion (A) is true and Reason (R) is false
 - (d) Assertion (A) is false and Reason (R) is true