MCQ Practice

Core Java

1. What is the full form of JSE
   1. Java Standard Edition
2. What is the full form of JEE
   1. Java Enterprise Edition
3. What is the full form of JME
   1. Java Micro Edition
4. What is the full form of JIT
   1. Just In Time Compiler
5. What is the full form of JRE
   1. Java Runtime Environment
6. What is the full form JDK
   1. Java Development Kit
7. Which environment will have the java compiler
   1. **JDK**
   2. JRE
   3. JVM
   4. JIT
8. What is the command to compile the java code
   1. **javac**
   2. java
   3. javap
   4. none
9. What is the command to disassemble the class file
   1. javac
   2. java
   3. **javap**
   4. javad
10. How to disassemble the class named Demo present in com.ibm package
    1. javap Demo
    2. javap \*.Demo
    3. javap com.ibm.Demo
    4. None
11. **Which of the following is not a feature of OOP?**

A. Encapsulation  
B. Inheritance  
C. Compilation  
D. Polymorphism

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

A. true  
B. false  
C. 0  
D. null

1. **Which of the following allows a subclass to use the methods and variables of a superclass?**

A. Encapsulation  
B. Inheritance  
C. Abstraction  
D. Polymorphism

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

A. this  
B. super  
C. extends  
D. implements

1. **What is method overloading?**

A. Defining multiple methods with the same name but different parameters  
B. Defining multiple methods with the same name and same parameters  
C. Calling a method inside another method  
D. Using private methods in a class

1. **What is the size of an int in Java?**

A. 2 bytes  
B. 4 bytes  
C. 8 bytes  
D. Depends on the system

1. **Which of the following is used to achieve abstraction in Java?**

A. Class  
B. Object  
C. Interface  
D. Method Overloading

1. **Which of the following concepts of OOP means exposing only necessary information to the outside world?**

A. Polymorphism  
B. Inheritance  
C. Encapsulation  
D. Abstraction

1. **Which of these is not a Java keyword?**

A. static  
B. Boolean  
C. void  
D. private

1. **Which operator is used by Java to allocate memory for an object?**

A. malloc  
B. alloc  
C. new  
D. create

**Core Java – Intermediate MCQs**

**1. Which of the following is true about Java memory management?**

A. Java uses a manual garbage collection mechanism  
B. Java uses automatic garbage collection  
C. Java does not have memory management  
D. Java relies on the operating system for garbage collection

**2. Which of the following can be used to create an immutable class in Java?**

A. Declaring class as abstract  
B. Using synchronized methods  
C. Making all fields final and private  
D. Using static blocks

**3. What will happen if the main() method is made private in Java?**

A. The program will compile and run  
B. The program will compile but not run  
C. The program will not compile  
D. The program will throw a runtime exception

**4. Which of the following is a checked exception in Java?**

A. NullPointerException  
B. IOException  
C. ArithmeticException  
D. ArrayIndexOutOfBoundsException

**5. What is the output of the following code?**

java

CopyEdit

String a = "hello";

String b = "hello";

System.out.println(a == b);

A. true  
B. false  
C. Compilation error  
D. Runtime error

**6. Which collection class allows you to access elements by a unique key and maintains insertion order?**

A. HashMap  
B. TreeMap  
C. LinkedHashMap  
D. Hashtable

**7. Which of the following is not a feature of the final keyword?**

A. Prevents method overriding  
B. Prevents inheritance of class  
C. Prevents object creation  
D. Prevents variable modification

**8. In Java, which statement about interfaces is not true?**

A. Interfaces can have default methods  
B. Interfaces can be instantiated directly  
C. Interfaces support multiple inheritance  
D. Interfaces can extend other interfaces

**9. What does the transient keyword in Java signify?**

A. The method cannot be overridden  
B. The variable should not be serialized  
C. The method is deprecated  
D. The class cannot be extended

**10. Which method is called by the garbage collector before destroying an object?**

A. destroy()  
B. delete()  
C. finalize()  
D. dispose()

**Answers**

1. B
2. C
3. B
4. B
5. A
6. C
7. C
8. B
9. B
10. C

**Object-Oriented Programming (OOP)**

1. Which of the following is not a feature of OOP?
   * A) Encapsulation
   * B) Inheritance
   * C) Compilation
   * D) Polymorphism
2. What is the default value of a boolean variable in Java?
   * A) true
   * B) false
   * C) 0
   * D) null
3. Which keyword is used to inherit a class in Java?
   * A) this
   * B) super
   * C) extends
   * D) implements
4. What is the purpose of the super keyword?
   * A) To call a method of the current class
   * B) To call a constructor of the superclass
   * C) To create an instance of the superclass
   * D) To access private members of the superclass
5. Which of the following allows a subclass to use the methods and variables of a superclass?
   * A) Encapsulation
   * B) Inheritance
   * C) Abstraction
   * D) Polymorphism
6. What is method overloading?
   * A) Defining multiple methods with the same name but different parameters
   * B) Defining multiple methods with the same name and same parameters
   * C) Calling a method inside another method
   * D) Using private methods in a class
7. What is method overriding?
   * A) Defining a method in the subclass with the same signature as in the superclass
   * B) Defining a method in the superclass with the same signature as in the subclass
   * C) Changing the return type of a method
   * D) Changing the access modifier of a method
8. Which of the following is used to achieve abstraction in Java?
   * A) Class
   * B) Object
   * C) Interface
   * D) Method Overloading
9. What is the purpose of the final keyword in Java?
   * A) To prevent method overriding
   * B) To prevent inheritance of a class
   * C) To prevent modification of a variable
   * D) All of the above
10. Which of the following concepts of OOP means exposing only necessary information to the outside world?
    * A) Polymorphism
    * B) Inheritance
    * C) Encapsulation
    * D) Abstraction

**Exception Handling**

1. What is the difference between throw and throws?
   * A) throw is used to declare exceptions, throws is used to handle exceptions
   * B) throw is used to handle exceptions, throws is used to declare exceptions
   * C) throw is used to pass exceptions, throws is used to catch exceptions
   * D) throw is used to create exceptions, throws is used to propagate exceptions
2. Which of the following is a checked exception in Java?
   * A) NullPointerException
   * B) IOException
   * C) ArithmeticException
   * D) ArrayIndexOutOfBoundsException
3. What is the purpose of the finally block?
   * A) To handle exceptions
   * B) To execute code regardless of whether an exception occurs
   * C) To declare exceptions
   * D) To throw exceptions
4. Can we have a finally block without a catch block?
   * A) Yes
   * B) No
5. What is the try-with-resources statement?
   * A) A statement that automatically closes resources after use
   * B) A statement that handles exceptions
   * C) A statement that declares exceptions
   * D) A statement that throws exceptions
6. What is the Throwable class?
   * A) The superclass of all errors and exceptions
   * B) The superclass of all exceptions
   * C) The superclass of all errors
   * D) The superclass of all runtime exceptions
7. What is the difference between Error and Exception?
   * A) Error is a subclass of Exception
   * B) Exception is a subclass of Error
   * C) Error represents serious problems that a reasonable application should not try to catch
   * D) Exception represents serious problems that a reasonable application should not try to catch
8. What is the purpose of the getMessage() method in exceptions?
   * A) To get the message associated with the exception
   * B) To get the cause of the exception
   * C) To get the stack trace of the exception
   * D) To get the class name of the exception
9. What is exception chaining?
   * A) Catching an exception and throwing a new exception
   * B) Catching multiple exceptions in a single catch block
   * C) Throwing an exception from a finally block
   * D) Catching an exception and rethrowing it

**I/O Streams**

1. What is the difference between byte streams and character streams?
   * A) Byte streams handle raw binary data, character streams handle text data
   * B) Byte streams handle text data, character streams handle raw binary data
   * C) Byte streams are faster than character streams
   * D) Character streams are faster than byte streams
2. What is the purpose of FileInputStream and FileOutputStream?
   * A) To read and write text data
   * B) To read and write binary data
   * C) To read and write object data
   * D) To read and write character data
3. What is the role of BufferedReader and BufferedWriter?
   * A) To read and write text data with buffering
   * B) To read and write binary data with buffering
   * C) To read and write object data with buffering
   * D) To read and write character data with buffering
4. What is serialization in Java?
   * A) The process of converting an object into a byte stream
   * B) The process of converting a byte stream into an object
   * C) The process of saving an object to a file
   * D) The process of reading an object from a file

**Java New Features (Java 8 and above)**

1. What is the purpose of the default keyword in interfaces?
   * A) To define a method with a body in an interface
   * B) To define a constant in an interface
   * C) To define a static method in an interface
   * D) To define a private method in an interface
2. What is a functional interface?
   * A) An interface with multiple abstract methods
   * B) An interface with a single abstract method
   * C) An interface with no abstract methods
   * D) An interface with static methods only
3. Which of the following is a valid lambda expression?
   * A) () -> System.out.println("Hello")
   * B) () => System.out.println("Hello")
   * C) () : System.out.println("Hello")
   * D) () -> { System.out.println("Hello"); }
4. What does the Optional class represent?
   * A) A container object which may or may not contain a non-null value
   * B) A container object which always contains a non-null value
   * C) A container object which can contain multiple values
   * D) A container object which can contain null values only
5. Which method is used to create a stream from a collection?
   * A) stream()
   * B) toStream()
   * C) createStream()
   * D) generateStream()
6. What is the purpose of the Collectors class?
   * A) To collect elements from a stream into a collection
   * B) To collect elements from a collection into a stream
   * C) To collect elements from a stream into a map
   * D) To collect elements from a map into a stream
7. Which of the following is a terminal operation in the Stream API?
   * A) map()
   * B) filter()
   * C) forEach()
   * D) sorted()
8. What is the Method References feature in Java 8?
   * A) A shorthand notation of a lambda expression to call a method
   * B) A feature to reference methods in interfaces
   * C) A feature to reference methods in classes
   * D) A feature to reference methods in constructors
9. What is the purpose of the java.time package?
   * A) To handle date and time operations
   * B) To handle file I/O operations
   * C) To handle network operations
   * D) To handle concurrency operations
10. What does the var keyword do in Java 10 and above?
    * A) It allows the compiler to infer the type of a local variable
    * B) It defines a variable with a specific type
    * C) It defines a constant variable
    * D) It defines a variable with a dynamic type

**Multithreading**

1. What is multithreading in Java?
   * A) The ability of a CPU to provide multiple threads of execution concurrently
   * B) The ability of a CPU to provide multiple processes of execution concurrently
   * C) The ability of a CPU to provide a single thread of execution
   * D) The ability of a CPU to provide multiple CPUs
2. Which of the following methods is used to start a thread?
   * A) run()
   * B) start()
   * C) execute()
   * D) init()
3. What is the purpose of the synchronized keyword?
   * A) To allow multiple threads to access a method simultaneously
   * B) To prevent multiple threads from accessing a method simultaneously
   * C) To allow multiple threads to access a block of code simultaneously
   * D) To prevent multiple threads from accessing a block of code simultaneously
4. What is a deadlock in multithreading?
   * A) A situation where two or more threads are blocked forever
   * B) A situation where two or more threads are executing simultaneously
   * C) A situation where a thread is executing indefinitely
   * D) A situation where a thread is paused indefinitely
5. What is the Thread class used for?
   * A) To define a thread of execution
   * B) To define a task to be executed by a thread
   * C) To define a group of threads
   * D) To define a pool of threads
6. What is the Runnable interface used for?
   * A) To define a task to be executed by a thread
   * B) To define a thread of execution
   * C) To define a group of threads
   * D) To define a pool of threads
7. What is the Executor framework used for?
   * A) To manage and control thread execution
   * B) To define a thread of execution
   * C) To define a task to be executed by a thread
   * D) To define a group of threads
8. What is the ExecutorService interface used for?
   * A) To manage and control thread execution
   * B) To define a thread of execution
   * C) To define a task to be executed by a thread
   * D) To define a group of threads

**Collection Framework**

1. Which interface represents an ordered collection of elements?

* A) List
* B) Set
* C) Map
* D) Queue

1. Which class implements the List interface?

* A) HashSet
* B) LinkedList
* C) TreeMap
* D) PriorityQueue

1. Which of the following is true about HashMap?

* A) It allows duplicate keys
* B) It maintains insertion order
* C) It allows null values
* D) It is synchronized

Note: Hashtable doesn’t allow null, but it is synchronized, whereas HashMap allow null & it is non-synchronized, output will be same

Note: Vector vs ArraysList: Vector is synchronized, ArrayList is non-synchronized, output will be same

1. What does the containsKey() method in a Map do?

* A) Checks if a value exists in the map
* B) Checks if a key exists in the map
* C) Removes a key-value pair from the map
* D) Adds a key-value pair to the map

1. Which class implements the Set interface?

* A) HashSet
* B) TreeSet
* C) LinkedHashSet
* D) All of the above

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

* A) 5
* B) 10
* C) 15
* D) 20

1. Which method is used to remove all elements from a List?

* A) clear()
* B) removeAll()
* C) delete()
* D) reset()

1. What is the difference between ArrayList and LinkedList?

* A) ArrayList is faster for insertions and deletions
* B) LinkedList is faster for random access
* C) ArrayList uses a dynamic array, LinkedList uses a doubly-linked list
* D) There is no difference

1. Which of the following is a thread-safe collection?

* A) HashMap
* B) TreeMap
* C) Hashtable
* D) LinkedHashMap

1. What does the Collections.sort() method do?

* A) Sorts a List in ascending order
* B) Sorts a Set in ascending order
* C) Sorts a Map in ascending order
* D) Sorts a List in descending order

Note: Collections.sort(List<T>)

1. Which interface does the Iterator belong to?

* A) Collection
* B) List
* C) Set
* D) All of the above

1. What is the purpose of the Comparator interface?

* A) To compare two objects for equality
* B) To compare two objects to determine their order
* C) To define the natural ordering of objects
* D) To define the hash code of objects

1. Which method is used to obtain an iterator for a List?

* A) iterator()
* B) listIterator()
* C) getIterator()
* D) both A and B

**String Handling**

1. Which class is used to create strings in Java?

* A) StringBuilder
* B) StringBuffer
* C) String
* D) StringTokenizer

1. What does the intern() method do?

* A) Returns a new string object
* B) Returns a reference to the string from the string pool
* C) Modifies the string in the string pool
* D) None of the above

1. Which of the following is immutable in Java?

* A) String
* B) StringBuffer
* C) StringBuilder
* D) None of the above

Note: StringBuffer vs StringBuilder gives the same output, StringBuffer is synchronized & StringBuilder is non-synchronized

1. What does the equals() method do? (String class)

* A) Compares the memory addresses of two strings
* B) Compares the characters of two strings
* C) Compares the hash codes of two strings
* D) None of the above

1. Which method is used to convert a string to lowercase?

* A) toLowerCase()
* B) toLower()
* C) convertToLower()
* D) None of the above

1. Which method is used to find the length of a string?

* A) length()
* B) size()
* C) getLength()
* D) None of the above

1. What does the substring() method do?

* A) Extracts a part of the string
* B) Replaces a part of the string
* C) Converts the string to uppercase
* D) None of the above

1. Which method is used to replace a character in a string?

* A) replace()
* B) replaceChar()
* C) change()
* D) None of the above

1. What is the output of "Hello".charAt(1)?

* A) H
* B) e
* C) l
* D) o

1. Which method is used to split a string into an array of substrings?

* A) split()
* B) divide()
* C) partition()
* D) None of the above

**Executor Framework**

1. What is the purpose of the Executor framework?

* A) To manage thread creation and execution
* B) To handle exceptions in threads
* C) To synchronize threads
* D) To provide thread-safe collections

1. Which interface represents an asynchronous task in the Executor framework?

* A) Runnable
* B) Callable
* C) Future
* D) ExecutorService

1. What does the submit() method of ExecutorService return?

* A) void
* B) Runnable
* C) Callable
* D) Future

1. Which method is used to shut down an ExecutorService?

* A) stop()
* B) shutdown()
* C) terminate()
* D) close()

MCQ Core Java Code Snippet

**What will be the output of the following code?**

public class Test {

public static void main(String[] args) {

String s1 = "Java";

String s2 = new String("Java");

System.out.println(s1 == s2);

}

}

* A) true
* B) false
* C) Compilation error
* D) Runtime error

**What does this code print?**

public class Main {

public static void main(String[] args) {

List<Integer> list = new ArrayList<>();

list.add(10);

list.add(20);

list.remove(1);

System.out.println(list);

}

}

* A) [10, 20]
* B) [20]
* C) [10]
* D) [10, null]

**3. What will be printed?**

public class Demo {

public static void main(String[] args) {

int result = divide(10, 0);

System.out.println("Result: " + result);

}

public static int divide(int a, int b) {

try {

return a / b;

} catch (ArithmeticException e) {

System.out.println("Error");

return -1;

}

}

}

* A) Error followed by Result: -1
* B) Compilation error
* C) Runtime exception
* D) Result: 0

**4. What will be the output?**

java

CopyEdit

public class ThreadTest extends Thread {

public void run() {

System.out.println("Running");

}

public static void main(String[] args) {

ThreadTest t = new ThreadTest();

t.run();

System.out.println("Main");

}

}

* A) Running Main
* B) Main Running
* C) Running
* D) Main

**5. What will this code output?**

java

CopyEdit

public class LambdaTest {

public static void main(String[] args) {

Runnable r = () -> System.out.println("Lambda");

r.run();

}

}

* A) Compilation error
* B) Lambda
* C) Nothing
* D) Runtime error

**6. What will be printed?**

java

CopyEdit

import java.util.\*;

public class MapTest {

public static void main(String[] args) {

Map<String, String> map = new HashMap<>();

map.put(null, "value1");

map.put("key1", null);

System.out.println(map.size());

}

}

* A) 0
* B) 1
* C) 2
* D) Exception

**7. What will be the output?**

java

CopyEdit

class Outer {

static class Inner {

void display() {

System.out.println("Inner");

}

}

public static void main(String[] args) {

Outer.Inner obj = new Outer.Inner();

obj.display();

}

}

* A) Inner
* B) Outer
* C) Inner class cannot be static
* D) Compilation error

**8. What is the result of the following?**

java

CopyEdit

public class WrapperTest {

public static void main(String[] args) {

Integer a = 1000;

Integer b = 1000;

System.out.println(a == b);

}

}

* A) true
* B) false
* C) Compilation error
* D) Runtime error

**9. What happens when this code runs?**

public class FinallyTest {

public static void main(String[] args) {

try {

System.exit(0);

} finally {

System.out.println("Finally");

}

}

}

* A) Finally
* B) No output
* C) Compilation error
* D) Runtime error

**9. What happens when this code runs?**

java

CopyEdit

public class FinallyTest {

public static void main(String[] args) {

try {

System.exit(0);

} finally {

System.out.println("Finally");

}

}

}

* A) Finally
* B) No output
* C) Compilation error
* D) Runtime error

**10. What will be the result of this code?**

public class StringTest {

public static void main(String[] args) {

String s = "hello";

s.concat(" world");

System.out.println(s);

}

}

* A) hello
* B) hello world
* C) Compilation error
* D) null