

2 Lecture - CS506

Important Mcqs

Sure, here are 10 multiple-choice questions (MCQs) related to Java Virtual Machine (JVM) and Runtime Environment, along with their solutions and multiple options:

****Question 1:****

What is the primary purpose of the Java Virtual Machine (JVM)?

- a) Compiling Java source code
- b) Executing Java bytecode
- c) Translating Java code to machine code
- d) Debugging Java applications

****Solution:** b) Executing Java bytecode**

****Question 2:****

Which of the following is NOT a responsibility of the Java Virtual Machine (JVM)?

- a) Memory management
- b) Bytecode verification
- c) Source code compilation
- d) Garbage collection

****Solution:** c) Source code compilation**

****Question 3:****

The JVM provides platform independence by:

- a) Compiling code into machine-specific binary
- b) Running Java code without compilation
- c) Converting bytecode to native machine code
- d) Translating source code to assembly language

****Solution:** c) Converting bytecode to native machine code**

****Question 4:****

What is the term for the process of verifying bytecode for type safety before execution?

- a) Bytecode analysis
- b) Bytecode validation
- c) Bytecode verification
- d) Bytecode authentication

****Solution:** c) Bytecode verification**

****Question 5:****

Which component of the Java Runtime Environment (JRE) is responsible for managing memory and cleaning up unreferenced objects?

- a) Bytecode Compiler
- b) Class Loader
- c) Just-In-Time (JIT) Compiler
- d) Garbage Collector

****Solution:** d) Garbage Collector**

****Question 6:****

The Java Runtime Environment (JRE) includes:

- a) Only the Java compiler
- b) Only the JVM
- c) Both the JVM and the Java class libraries
- d) Only the Java Virtual Machine (JVM)

****Solution:** c) Both the JVM and the Java class libraries**

****Question 7:****

Which part of the Java Runtime Environment (JRE) is responsible for loading Java class files?

- a) Bytecode verifier
- b) Class Loader
- c) JIT Compiler
- d) Bytecode Generator

****Solution:** b) Class Loader**

****Question 8:****

What is the main purpose of the Just-In-Time (JIT) compiler in the Java Runtime Environment (JRE)?

- a) Translating Java source code to bytecode
- b) Executing Java bytecode
- c) Translating bytecode to native machine code
- d) Verifying bytecode for type safety

****Solution:**** c) Translating bytecode to native machine code

****Question 9:****

Which phase of Java program execution involves converting bytecode into native machine instructions?

- a) Compilation phase
- b) Interpretation phase
- c) Execution phase
- d) Compilation and Execution phase

****Solution:**** c) Execution phase

****Question 10:****

What happens if a Java application violates memory allocation limits in the Java Virtual Machine (JVM)?

- a) The JVM compiles the code to native machine code
- b) The application crashes with a memory allocation error
- c) The JVM automatically deallocates memory
- d) The application is suspended temporarily

****Solution:**** b) The application crashes with a memory allocation error