

# 23 Lecture - CS506

## Important Mcqs

Certainly, here are 10 multiple-choice questions (MCQs) related to Multithreading along with their solutions and multiple options:

**\*\*Question 1: What is multithreading in programming?\***

- A) Running multiple instances of the same program
- B) Executing multiple programs simultaneously
- C) Creating multiple threads within a single program
- D) Running multiple processes on different computers

**\*\*Solution: C\*\***

**\*\*Question 2: What is the primary advantage of multithreading?\***

- A) Simplified code structure
- B) Improved memory management
- C) Efficient utilization of CPU cores
- D) Enhanced graphical user interface

**\*\*Solution: C\*\***

**\*\*Question 3: What is a thread in multithreading?\***

- A) A section of memory used for storage
- B) An independent process on the system
- C) A separate program running on the CPU
- D) A sequence of instructions executed concurrently

**\*\*Solution: D\*\***

**\*\*Question 4: What is context switching in multithreading?\*\***

- A) Changing the program entirely
- B) Switching between threads to execute
- C) Restarting the computer
- D) Storing data in a new context

**\*\*Solution: B\*\***

**\*\*Question 5: Which of the following accurately describes race conditions in multithreading?\*\***

- A) Controlled synchronization between threads
- B) Predictable execution of threads
- C) Undesirable outcomes due to thread timing
- D) Sequential execution of threads

**\*\*Solution: C\*\***

**\*\*Question 6: What is a critical section in multithreading?\*\***

- A) A portion of code executed only by the main thread
- B) A section of code that requires synchronized access
- C) A section of code with maximum performance
- D) A part of the program that has errors

**\*\*Solution: B\*\***

**\*\*Question 7: How can deadlock occur in multithreading?\*\***

- A) When a thread finishes its execution
- B) When a thread is blocked waiting for a resource

- C) When threads execute in random order
- D) When threads communicate effectively

**\*\*Solution: B\*\***

**\*\*Question 8: Which threading model allows multiple threads to run concurrently on multiple CPUs?\***

- A) Single-threading
- B) Multi-threading
- C) Hyper-threading
- D) Distributed threading

**\*\*Solution: C\*\***

**\*\*Question 9: What is the purpose of the synchronized keyword in Java multithreading?\***

- A) To start a new thread
- B) To pause a thread's execution
- C) To prevent thread interference and conflicts
- D) To terminate a thread

**\*\*Solution: C\*\***

**\*\*Question 10: What is a thread pool in multithreading?\***

- A) A group of threads sharing a single memory space
- B) A collection of programs running in parallel
- C) A set of threads managed by a system to execute tasks
- D) A mechanism to limit the number of threads in a program

**\*\*Solution: C\*\***