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**