

26 Lecture - CS410

Important Mcqs

****Question 1: What is a thread in the context of programming?***

- a) A function call
- b) A sequence of instructions
- c) A graphical user interface element
- d) An input/output operation

****Solution: b) A sequence of instructions****

****Question 2: What is the purpose of thread synchronization?***

- a) To increase the number of threads
- b) To reduce the number of threads
- c) To coordinate thread execution and data access
- d) To stop all threads simultaneously

****Solution: c) To coordinate thread execution and data access****

****Question 3: What is a race condition in multithreading?***

- a) A competition between threads for system resources
- b) A condition where two or more threads access shared data concurrently, leading to unexpected results
- c) A condition where a thread fails to start
- d) A synchronization mechanism

****Solution: b) A condition where two or more threads access shared data concurrently, leading to unexpected results****

****Question 4: Which of the following is a thread synchronization primitive?***

- a) Thread.sleep()
- b) Thread.start()
- c) Thread.join()
- d) Thread.run()

****Solution: c) Thread.join()***

****Question 5: What is the purpose of the "synchronized" keyword in Java?***

- a) It creates a new thread
- b) It marks a method as deprecated
- c) It prevents a method from being overridden
- d) It ensures exclusive access to a block of code by only one thread at a time

****Solution: d) It ensures exclusive access to a block of code by only one thread at a time***

****Question 6: What can be used to prevent deadlock in multithreaded programs?***

- a) Increasing the number of threads
- b) Decreasing the number of threads
- c) Using thread.sleep()
- d) Implementing a proper order for acquiring locks

****Solution: d) Implementing a proper order for acquiring locks***

****Question 7: Which synchronization primitive allows multiple threads to read a shared resource simultaneously, but only one thread to write?***

- a) Semaphore
- b) Mutex
- c) ReadWriteLock

d) CountdownLatch

****Solution: c) ReadWriteLock****

****Question 8: What is a critical section in the context of synchronization?****

- a) A section of code that only runs on a single thread
- b) A section of code that must be executed by multiple threads concurrently
- c) A section of code that is ignored by all threads
- d) A section of code where errors are expected

****Solution: b) A section of code that must be executed by multiple threads concurrently****

****Question 9: Which of the following is a potential drawback of excessive thread synchronization?****

- a) Deadlocks
- b) Race conditions
- c) Improved performance
- d) Concurrent execution

****Solution: a) Deadlocks****

****Question 10: What is a mutex?****

- a) A type of thread
- b) A synchronization primitive that allows multiple threads to access a resource simultaneously
- c) A synchronization primitive that ensures only one thread can access a resource at a time
- d) A thread scheduler

****Solution: c) A synchronization primitive that ensures only one thread can access a resource at a time****