

## LECTURE 5

### Parallel Computing Platforms - Shared Memory Coherence and Synchronization

1. It is memory that may be simultaneously accessed by multiple programs with an intent to provide communication among them or avoid redundant copies.

- **SHARED MEMORY**

2. An approach of shared memory that suspending its execution and relinquishing its processor to some other thread.

- **BLOCKING**

3. An approach of shared memory repeatedly attempting to acquire the lock in the hope that it will become free

- **SPINNING**

4. What is the default protocol in modern machines for cache coherence?

- **INVALIDATE**

5-8. What are the four states of the MESI protocol?

- **MODIFIED, EXCLUSIVE, SHARED, INVALID**

9. What is the most common type of coherence protocol used in contemporary systems?

- **SNOOPY**

10. What is the main drawback of update protocols compared to invalidate protocols?

- **FALSE SHARING**

11-12. What is the purpose of the bus in a snoopy cache system?

- **COHERENCE REQUESTS AND DATA TRANSFER**

13. It is a portion of memory is mapped into the address space of one or more processes.

- **SHARED MEMORY SYNCHRONIZATION**

14-15. What are the Normal Instructions in Primitives for Shared-memory Synchronization?

- **LOAD and STORE**