UNIT-2
PARALLEL PROGRAM CHALLENGES
16 mark

1 a) Hardware Constraint to improve scalability:

Refer Page No 352 in Darryl Gove book.

TOPICS TO COVER: Bandwidth sharing between cores, False Sharing, Cache conflict and capacity, Pipeline resource starvation

(or)

Refer rejinpaul notes attached

1 b) Describe various approaches in parallel Programming.

2. Synchroization Primitives

3. Data race, tools to detect data race and how to avoid data race.

4. Necessity of structure reflects in performance.

Refer Page No 53 in Darryl Gove book.

Or

Refer rejinpaul notes attached.

5. Explain condition variable with Producer consumer problem.

Refer Page No 135 in Darryl Gove book.

Or

Refer rejinpaul notes attached.

6. Concept of communication between threads.

Refer Page No 135 in Darryl Gove book.

TOPICS TO COVER:

- Memory, shared memory and memory-mapped files
- Condition variables
- Signals and events
- Message Queues
- Named Pipes
- Communication through the network stack
- Storing thread-private data

Or

Refer rejinpaul notes attached.