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.

ANSWER : Link

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2. Synchroization Primitives

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

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4. Necessity of structure reflects in performance.

Refer Page No 53 in Darryl Gove book.

Or

Refer rejinpaul notes attached.

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5. Explain condition variable with Producer consumer problem.

Refer Page No 135 in Darryl Gove book.

Or

Refer rejinpaul notes attached.

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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.