Principles of Parallel Algorithm Design - Concurrency and Decomposition

1.What type of approach can be used to identify independent task only when they are guaranteed to not have dependencies

- Conservative Approach

2.Type of approach which schedule tasks even when they may potentially be erroneous.

- Optimistic Approach

3.What type of mechanism require in Optimistic Approaches in case of an error.

- Roll-Back Mechanism

4. this partitioning is applicable if each output can be naturally computed as a function of the input.

-Input data partitioning

5. A powerful and commonly used method for deriving concurrency in algorithm that operate on large data structure

- Data decomposition

6. A data partitioning that can sometimes lead to higher concurrency than partitioning input or output data

- Intermediate data partitioning

7-8 In the Database Query processing the execution of the query can be divided into _____ in various ways. Each task can be thought of as generating an _____ table of entries that satisfy a particular clause.

- Subtask,

- intermediate

9 The number of tasks into which a problem is decomposed determines its _____

- Granularity

10. A decomposition type counterpart of Dense Matrix Vector wherein each task corresponds to the computation of no. of elements of the result of the vector

- Coarse grained decomposition.

11. The length of the longest path in a task dependency graph is called?

- Critical Path Length

(12 – 15) Give 4 Decomposition Techniques

- Recursive Decomposition
- Data Decomposition
- Exploratory Decomposition
- Speculative Decomposition