What are the sources of overhead?

1. Essential /Excess Computation
2. Inter-process Communication
3. Idling
4. All above

**Answer : D**

Which are the performance metrics for parallel systems?

1. Execution Time
2. Total Parallel Overhead
3. Speedup
4. Efficiency
5. Cost
6. All above

**Answer : F**

The efficiency of a parallel program can be written as: ***E = Ts / pTp.*** True or False?

1. True
2. False

**Answer : A**

Overhead function or ***total overhead*** of a parallel system as the total time collectively spent by all the processing elements over and above that required by the fastest known sequential algorithm for solving the same problem on a single processing element. True or False?

1. True
2. False

**Answer : A**

What is Speedup?

1. A measure that captures the relative benefit of solving a problem in parallel. It is defined as the ratio of the time taken to solve a problem on a single processing element to the time required to solve the same problem on a parallel computer with *p* identical processing elements.
2. A measure of the fraction of time for which a processing element is usefully employed.
3. None of the above

**Answer : A**

In an ideal parallel system, speedup is equal to *p* and efficiency is equal to one. True or False?

1. True
2. False

**Answer : A**

A parallel system is said to be ***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*** if the cost of solving a problem on a parallel computer has the same asymptotic growth (in terms) as a function of the input size as the fastest-known sequential algorithm on a single processing element.

1. Cost optimal
2. Non Cost optimal

**Answer : A**

Using fewer than the maximum possible number of processing elements to execute a parallel algorithm is called ***\_\_\_\_\_\_\_\_\_\_\_\_\_\_*** a parallel system in terms of the number of processing elements.

1. Scaling down
2. Scaling up

**Answer : B**

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ function determines the ease with which a parallel system can maintain a constant efficiency and hence achieve speedups increasing in proportion to the number of processing elements.

1. Isoefficiency
2. Efficiency
3. Scalability
4. Total overhead

**Answer : A**

Minimum execution time for adding n numbers is *Tp = n/p + 2 logp* True or False ?

1. True
2. False

**Answer : A**

The overhead function To = pTP − TS.

1. True
2. False

**Answer : A**

Performance Metrics for Parallel Systems: Speedup(S) =TS/TP

1. True
2. False

**Answer : A**

Matrix Vector multiplication 2D Partitions requires some basic communication operations

1. one-to-one communication to align the vector along the main diagonal
2. one-to-all broadcast of each vector element among the n processes of each column
3. all-to-one reduction in each row
4. All Above

**Answer : D**