

**Parallel Architecture & Computing (New)**  
(IT-309, Dec 2005)

Time: 3 Hrs

Max Marks: 60

Note: Section A is compulsory. Attempt any four questions from section B and any two from section C.

**Section-A**

1. (a) What is Amdahl's law?  
(b) What is the difference between multiprocessor and multicomputer architecture of parallel computers?  
(c) Discuss the difference between SIMD and MIMD processors.  
(d) Discuss the four memory update options in PRAM model.  
(e) What is Fat Tree?  
(f) Discuss the advantages of vector processor.  
(g) What is pipelining?  
(h) What is Hndler's classification of parallel computers?  
(i) What do you mean by parallel prefix and parallel list ranking?

**Section-B**

2. What is the difference between uniform and non uniform memory access multiprocessors?
3. Discuss various PRAM models and their relative powers.
4. Compare static and dynamic inter connection network.
5. Discuss scheduling in multiprocessor systems.
6. Discuss the load balancing in multiprocessor system.

**Section-C**

7. Discuss various dynamic interconnection networks.
8. Discuss any cost optimal algorithm or parallel merge algorithm.
9. Discuss parallel reduction algorithm or parallel merge algorithm.