

22/10/13.

23

**B.E./B.Tech. (FT) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC 2013**

**BRANCH: ELECTRONICS AND COMMUNICATION ENGINEERING**

**SIXTH SEMESTER**

**EC507 / EC9079 – PARALLEL AND DISTRIBUTED PROCESSING**

REGULATIONS: 2004 / 2008

Time: 3 Hours

Max.Marks: 100

Answer ALL questions

**PART A – (10 x 2 = 20 marks)**

1. List out the system attributes that affects the system performance
2. Using Amdahl's law, show that the Speed up is inversely proportional to fraction of sequential code in the program
3. What do you meant by Superscalar Processor?
4. Define memory hierarchy with to define Capacity, Speed and Cost
5. Derive the formula for Speed up performance for pipelined Processor
6. What do you meant by Latency in a pipeline?
7. What is advantage of wormhole routing
8. What do you meant by critical section
9. List out the different ways of IPC in a multiprocessor systems
10. What is the difference between multitasking and multiprocessing system. Give an example.

**PART B – (5 x 16 = 80 marks)**

- 11 (i) Discuss the architecture of UMA, NUMA and COMA with a neat diagram (8)
- (ii) Discuss all type of data dependency and give the pictorial notation for each one (8)

- 12 (a) Describe the two method of memory interleaving with a neat diagram

(OR)

12 (b) With a neat diagram, explain how the Virtual memory model is implemented using paging mechanism

13 (a) Briefly discuss any four methods collision free scheduling employed in a pipeline processor.

(OR)

13 (b) Describe any two multiprocessor Interconnection architecture in detail.

14 (a) Discuss in detail different phases of Compilation in Parallel Code generation

(OR)

14 (b) Briefly investigate the methods for vectorization of scalar code by considering an example code of your choice

15 (a) Briefly discuss the synchronization methods used in solving the problem of shared objects in concurrent processes

(OR)

15 (b) Explain in detail, various Message Passing Interface available for Distributed Systems.

\*\*\*