

**B.E./B.Tech. (FT) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC 2012**

**BRANCH: ELECTRONICS AND COMMUNICATION ENGINEERING**

**EIGHTH SEMESTER**

**EC9079 – PARALLEL AND DISTRIBUTED PROCESSING**

REGULATIONS: 2009

Time: 3 Hours

Max.Marks: 100

Answer ALL questions

**PART A – (10 x 2 = 20 marks)**

1. List out the properties that are used for estimating the performance of the inter connection network
2. Define four variants of PRAM model
3. What do you meant by superscalar processor?
4. State the advantages and disadvantages of increasing Block size of the cache in designing a cache?
5. Give the formula for speed up ratio of pipeline over non-pipeline machine?
6. What do you meant by the term “pipeline stalling”?
7. List out the differences of multiprogramming, multiprocessing and multitasking?
8. What are the functions of Parallelizing Compilers?
9. What do you meant by time synchronization and Space synchronization?.
10. What do you meant by non-blocking operation in MPI?

**PART B – (5 x 16 = 80 marks)**

- 11 (i) With a neat diagram, briefly explain the architecture of any three shared-memory multiprocessor models (12)  
(ii) Describe your interpretation for Amdahl’s law (4)
- 12 (a) Explain the implementation of direct mapping cache in a system having a cache size of 64k and main memory size with 32 Mbytes

(OR)

12 (b) With a neat diagram, explain the architecture of VLIW architecture

13 (a) With a neat diagram, discuss any four methods for collision-free scheduling in a pipeline.

(OR)

13 (b) Briefly discuss functions of Hierarchical bus, Crossbar Switch and Multiport memory for providing dynamic interconnection between the units.

14 (a) Describe the Functional Programming model and Logic Programming model for parallel processing

(OR)

14 (b) Describe the software environments and development techniques for parallel Computers

15 (a) Briefly discuss any four 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.

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