

Roll No. ....

Exam Code : J-19

Subject Code—0426

**M.C.A. (Fifth Year) EXAMINATION**

(5 Years Integrated Course)

(Batch 2009 Onwards)

ADVANCED ARCHITECTURE AND  
PARALLEL PROCESSING

MCA-502

*Time : 3 Hours*

*Maximum Marks : 70*

**Section A**

**Note :** Attempt any *Seven* questions. **7×5=35**

1. Write a short note on VLSI Model.
2. List various methods to remove the cache coherence problem.
3. Define the concept of virtual memory technology.

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**P.T.O.**

4. Write down various applications of pipeline.
5. Briefly discuss synchronization mechanisms.
6. Define Flynn's classification of computer architecture.
7. Differentiate between split and unified cache.
8. Briefly explain various languages that are used in parallel computing.
9. Compare Hardware and Software Parallelism.
10. Define Backplane Bus System.

### Section B

**Note :** Attempt all the questions.

11. Explain the concept of Memory Interleaving. Discuss various types of cache memory mapping organization.

*Or*

Distinguish between multi-computers and multiprocessors. Describe the PRAM model of a Multiprocessor and also write a PRAM matrix multiplication algorithm. **12**

12. Discuss levels of parallelism in computing. Compare scalar performance with vector performance in terms of speeding up of computation.

*Or*

Differentiate between the following :

- (a) SIMD and MIMD architecture
- (b) Linear and Non-linear Pipelines. **12**

13. Write short notes on the following :

- (a) Requested and Weak consistency Model
- (b) Compiler used in Parallel Model.

*Or*

Explain the arithmetic pipeline, superscalar pipeline and super pipeline design. **11**