

Roll No.

Subject Code—6817

M.C.A. (Fifth Year) EXAMINATION

(5 Years Integrated Course)

(Main/Re-appear)

MCA-502

**ADVANCED ARCHITECTURE AND
PARALLEL PROCESSING**

Time : 3 Hours

Maximum Marks : 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. Explain the following in relation to pipelining :

- (a) Superscalar
- (b) Superpipeline
- (c) Superscalar Superpipeline.

Also discuss speedup factor of each.

2. Differentiate between the following :
 - (a) Linear and Non-linear pipeline
 - (b) Split and Unified Cache.
3. Explain Flynn's classification of parallel computer architecture. Also discuss UMA, NUMA and CDMA models.
4. Explain different levels of parallelism in program execution. Also discuss different types of dependencies.
5. Explain TLB, paging and segmentation in processing system. Also explain different memory replacement policies.
6. Explain different cache memory organization techniques along with their mapping.
7. Explain different methods to remove Cache coherence problem. Also discuss different synchronization mechanisms.

8. Write short notes on the following :

- (a) VLSI Models
- (b) Virtual Memory.