

Exam. Code : 208601
Subject Code : 3694

M.Sc. Information Technology Ist Semester
MIT-103 ADVANCED COMPUTER
ORGANIZATION & ARCHITECTURE

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt **FIVE** questions in all, taking at least **ONE** from each Section. All questions carry equal marks.

SECTION—A

1. What are various levels of parallelism in program execution? Define various types of PRAM models of parallel computation.
2. Describe at least four characteristics of MIMD multiprocessors that distinguish them from multiple computer systems or computer networks.

SECTION—B

3. Discuss the basic Uniprocessor architecture and parallel processing mechanism in this architecture.
4. State and explain Amdahl's law for measuring speed up performance of parallel systems. Also, list the outcomes of analysis of the Amdahl's law.

SECTION—C

5. Discuss the principles of designing pipelined processors. Compute the effective pipeline throughput with the influence of branching.

6. "Instruction execution throughput increases in proportion with the number of pipeline stages." Is it true ? Justify your statement.

SECTION—D

7. Distinguish among scalar, super-scalar and super-pipeline processors. Discuss the design of super-pipelined processor.
8. Elaborate the following :
- (a) SIMD computer organization
 - (b) Array processor and its types.