

Exam. Code : 206701

Subject Code : 5171

M.Sc. Computer Science 1st Semester

MCS-102 : ADVANCED COMPUTER ARCHITECTURE

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt *five* questions. All questions carry equal marks.

1. Discuss the functional structure of an SIMD Array Processor. How it is different from MIMD Multiprocessor System ?
2. Explain Handler's architectural classification scheme of computer organization in detail.
3. Prove that a k-stage Linear Pipeline can be at most k-times faster than that of a non-pipelined Serial Processor.
4. Discuss major network design decisions required for Inter - PE communications for an SIMD machine.
5. Explain system architecture of a Uniprocessor Computer with example.

6. Define the term Pipelining. Discuss the principles of Linear Pipelining.
7. Explain with the help of suitable example :
 - (a) Arithmetic Pipelining
 - (b) Instruction Pipelining
 - (c) Processor Pipelining.
8. How various pipeline problems can be solved with the help of Reservation Table in Linear Pipeline ? Discuss.