Exam. Code : 206701
Subject Code : 3665

M.Sc. Computer Science 1st Semester

ADVANCED COMPUTER ARCHITECTURE

Paper : MCS-102

Time Allowed—3 Hours]   [Maximum Marks—100

Note :— Attempt any **five** questions, selecting at least **one** question from each section. All questions carry equal marks.

SECTION—A

1. (a) Discuss the functional structure of an SIMD Array Processor. How it is different from MIMD Multiprocessor system ?

    (b) Differentiate between Vector Processor and Systolic processor.

2. (a) Explain Kung's software taxonomy in detail.

    (b) How SPMD is related with MIMD ?

SECTION—B

3. Discuss different available parallel computing models in brief. Explain the working of PRAM in detail.

4. Explain system architecture of a Uniprocessor Computer with example.

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SECTION—C

5. "A Pipeline Computer performs overlapped computations to exploit temporal parallelism". Discuss.

6. Differentiate between :

   (a) Parallelism versus Pipelining.

   (b) Serial Processing versus Parallel Processing.

SECTION—D

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.