Subject Code : P8MCAE8

ELECTIVE – III - 1. PARALLEL PROCESSING

Unit I

Parallel computer models: the state of computing – Multiprocessors and multicomputers – Multivector and SIMD computers.

Unit II

Program and Network properties: Conditions of parallelism – Program partitioning and scheduling – program flow mechanisms – system interconnect architectures.

Unit III

Processors and memory hierarchy: Advanced processor Technology – Superscalar and vector processors – Linear Pipeline Processors – Nonlinear Pipeline Processors.

Unit IV

Multiprocessors and Multicomputers: Multiprocessor System Interconnects-Message-Passing Mechanisms – SIMD Computer Organization. The Connection Machine CM5 – Fine – Grain Multicomputers.

Unit V

Software for Parallel Programming : Parallel Programming Models – Parallel Languages and Compilers – Dependence Analysis of Data Arrays.

Books for reference:

1. “Computer Architecture and Parallel Processing”, Kai Hwang and Baye
2. “Parallel Computing, Theory and Practice” Michel J.Quinn, McGraw-Hill International Edn., Singapore 1994