Subject Code : CCN3K10

CORE COURSE –X - 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.