

**SEMESTER IV – PAPER XI  
COMPUTER HARDWARE AND OPERATING SYSTEM**

**UNIT I: PC FAMILY**

8088 (internal organization) – Mother board components – SMPS – Mode switch – FDD-HDD-Memory map – POST routines – Peripherals.

**UNIT II: MOTHER BOARD FUNCTIONS**

Reset Logic – CPU nucleus logic – Bus arbitration logic – Ram organization: Decoder logic – Hardwired, PROM controlled and Pal controlled decoder methods – ROM decode logic.

**UNIT III**

Speaker – Coprocessor 8087 internal organization – Motherboard connector – Keyboard organization – Keyboard interface – Printer: parallel interface, - Series interface FDC-HDC-CRT- Mouse.

**UNIT IV**

Computer organization and operation – Microcomputer architecture memory organization, instruction set, CPU organization – interconnection of basic units – interacting of CPU – Interrupt structure – Multiprogramming – Processor feature.

**UNIT V: DOS OPERATING SYSTEM**

Hierarchy – DOS structure – Boot record – ROMBIOS – DOS programmes – command interpreter – Resident portion in DOS initialization.

UNIX: an overview of UNIX system – Structure of Unix system – file structure- kernel and Utilities – Shell programming.

**BOOKS FOR STUDY:**

- 1) IBM PC and Clones, Hardware Trouble Shooting and maintenance, S. Govindarajulu, Tata McGraw Hill Publishing company Ltd., New Delhi, 1993.
- 2) Inside the IBM PC, Norton P., R. Branly Company 1983.
- 3) Computer system architecture, M.Morries Mano, PHT LTd., New Delhi, 1994.
- 4) Programmer's Technical Reference MS-DOS IBM PC and Compatibles, Dave William, Galgotia, 1993.
- 5) Unix Shell Programming, S.G.Kochan and P.H.Wood Hayden Book, USA. 1990.
- 6) Advanced Programmers Guide to UNIX system V. Rebecca Thomas, McGraw Hill, Singapore, 1987.