Subject Code : P8ELE5

PC HARDWARE AND INTERFACING

UNIT-I

Hardware organization of IBM PC: Motherboard components - Advanced microprocessors: Protected mode operation, Virtual memory, Mulitasking, Special features of 80286, 80386, 80486, Pentium, Pentium MMX, Pentium Pro, Pentium-II processors; Chipset chips; Memory: Memory organization, memory-map. Memory techniques.

UNIT-II

System timer and RTC, System resources – Interrupts, DMA channels, I/O map.
Peripherals: Drives – Principles of magnetic storage, FDD, HDD, CD-ROM drive, IDE, SCSI interfaces. Video display systems – Video adapters, video standards, display controllers.

UNIT-III

Peripherals: Keyboard and mouse, Printers, ROM BIOS services – Video, Keyboard, Disk, Printer, RTC, Serial I/O, mouse services, C programming.

UNIT-IV

I/O Buses: 8-bit ISA, 16-bit ISA, EISA, PCI, buses - pins and signals, Interfacing examples, PCMCIA and AGP

UNIT-V

Parallel port – Register organization, pins and signals, handshaking and programming of SPP, EPP and ECP modes Serial port – Registers, Pins and signals, programming USB – Features.

Textbooks:

N.Mathivanan, Microprocessors, PC Hardware and Interfacing, PHI, 2003.
Bary B. Brey, The INTEL Microprocessors 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium, and Pentium Pro processors, IV Ed., PHI, 2002.

Reference books:

B.Govindarajulu, IBM PC and Clones: Hardware, and Maintenance, TMH, 1991.
S.J. Bigelow, Troubleshooting, maintaining and repairing PCs, TMH, 2002.
Scott Muller, Upgrading and repairing PCs, PHI, 1999.