PC HARDWARE MAINTENANCE AND TROUBLE SHOOTING

Unit I: HARDWARE OVERVIEW

Introduction to computer organization-memory –PC family-PC hardware – interconnections between boxes-inside boxes – mother board, daughter boards, floppy disk drive, HDD, speaker, front panel indicators and control -mother board logic memory space-I/O port address-wait state – interrupts-I/O data transfer-DMA channels.

Unit II : PERIPHERAL DEVICES

Floppy drive controller-overview –disk format –FDC system interface –FDD interface –hard disk controller –Overview -Disk drives and interface-controller post description-hard disk format –display adapter-CRT controller principle-6845 display controller –Printer controller-centronics interface hardware overview.

Unit III: MOTHERBOARD CIRCUITS:

Motherboard functions-functional units and inter communications   reset logic-CPU nucleus logic-DMA logic-Wait state logic –Speaker logic - keyboard interface-SMPS.

Unit IV: INSTALLATION AND MAINTENANCE

Production-pre installation Planning-installation practice-Routine checks-special configuration-memory upgradation-HardDisk upgradation – DOS command (internal and external) preventive maintenance.

Unit V: TROUBLE SHOOTING

Computer faults-nature of faults-types of faults (Hardware or software)-diagnostic programs and tools – fault elimination-systematic troubleshooting procedure-mother board problem-serial port problems - FDC, HDC problems-display adaptor problems-printer problem – monitor problems-HDD, FDD problems.

TEXT BOOKS

1. B. Govindarajulu-IBM PC and clones-Tata McGraw Hill co-1995.
2. Robert C. Brenner-IBM PC Trouble shooting and Repair Guide BPS PUB.
3. Winn and Rosch- Hardware Bible-Techmedia