OBJECTIVES

1. To establish the self employed Society.
2. To generate the Computer Hardware Professionals.
3. To Train the lower order Technicians.
4. To generate man power at different level to unable the country to face the challenge of world modern I.T. and Instrumentation.

UNIT – I

INTRODUCTION PERIPHERAL DEVICES:

Different types of peripheral devices used in modern computers and their purpose General Block diagram of a peripheral device.

UNIT – II

BASIC INPUT DEVICES:

Different types of keyboards, Block diagram of keyboard, basic components of alphanumeric keyboard, Theory of operation of the keyboard, operation and working principle of mouse and different of mouses.

UNIT – III

BASIC OUTPUT DEVICES:

Elementary principle of scanning in video display system, Inter laced scanning and non-interlaced scanning, composite video signal of monochrome monitor and its parameters, Construction of CGA, VGA, EGA, HGA. Impact and nonimpact printers, operation of LaserJet printer with a block diagram, operation of inkjet printer with a block diagram.

UNIT – IV

BASIC STORAGE DEVICES:

Comparison of the random, sequential, sequential and direct access memories, Construction of floppy disk, various parts of a floppy disk drive, principle of operation of floppy disk drive with a block diagram, Construction of a hard disk, Different hard disk drives, principal of operation of disk drive with a block diagram, precautions to be taken in handling magnetic media.
UNIT – V

SPECIAL PERIPHERAL DEVICES:

Principle of working of a joystick and digitizer, operation of a plotter, various parts of magnetic tape transport, principle of operation of magnetic tape transport, principle of operation of CD-ROM drives, Sound cards working in modems.

Text Books:

1. B. Govindarajulu, IBM PC and CLONES, THGM Publications (UNIT – I & V)
2. STEUART M. ASSER, MICROCOMPUTER SERVICING, MERRILL, Publications (UNIT – II)
4. FLORES, COMPUTER PHRIPHRALS.
5. H. SANDERS, COMPUTER TODAY (UNIT IV)

PERIPHERALS AND INTERFACING LAB

1. Identification of I/O cards.
2. Study of Configuration of PC.
3. Setting of Jumpers for Interrupt request on various boards, Problem caused by mixing up interrupt request on boards.
4. Connecting two floppy disk drives (FDD) in a system.
5. Connecting two hard disk drives (HDD) in a system.
7. Study of mouse.
10. Hardware diagnosis using diagnostic software.
11. Loop back text for the serial port.
12. Trouble shooting a given printer.
13. Assembling a PC.
Answer ANY FIVE Questions from the following 5 * 15 = 75 marks

1. Explain the operation and working principles of mouse and different types of mouses

2. Explain the different types of peripheral devices used in modern computers.

3. Explain the working of monochrome monitors, CGA & VGA.

4. Write about various types of printers and explain their operation

5. Differentiate between random, sequential and direct access memories.

6. Write the precautions to be taken in handling magnet media and Discuss the construction of Hard Disk Drive

7. Write about the operation of CD-ROM and floppy disk drive.

8. Explain the various parts of magnet tape transport and write its principles of operation
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UNIT – I

INTRODUCTION:
Block diagram of an IBM PC and the function of individual units, PC Hardware characteristics, Micro, Mini, Mainframe and Super Computer Systems, overview of PS/2, Family, the PS/2 system board, selecting a PS/2 model for application.

UNIT – II

Personal Computer Architecture - IBMPC, PC/XT, PC/AT System configuration - ROM BIOS - Device drivers, Introduction to other personal computers/workstations/network computers.

UNIT – III

BASIC TROUBLE SHOOTING:
Various test equipment used for PC servicing, Reasons for failure of components like resistors, capacitors etc., Reasons for failure of a disk drive, Reasons for display failure, Reasons for the keyboard failure, Reasons for the keyboard failure, Reasons for printer failure, Reasons for power supply failure, Safety precautions to be taken during trouble shooting.

UNIT – IV

PREVENTIVE MAINTENANCE:
UNIT – V

HARDWARE DIAGNOSIS:

Power on self test - Significance of the error codes, Self diagnosis process of reading the ROM, Self diagnosis process of RAM testing, Video testing. Data recovery utilities
Note: All Units carry equal marks.

Text Books:

1. B.Govindarajulu, IBM PC and CLONES, THGM Publications (UNIT– I, II, & V)
2. STEUART M. ASER, MICROCOMPUTER SERVICING, MERRILL, Publications (UNIT – I)
3. ROBERT C.BRENNER, TROUBLE SHOOTING AND REPAIR GUIDE. BPB Pub.

PC MAINTENANCE & SOFTWARE INSTALLATION LAB

1. Disk Formatting, Partitioning and loading of operating system and different software
2. Replacing and fitting of different drives (HDD, FDD, CDRAM, ZIP drive etc) and Media Maintenance.
3. Working with CMOS setting utility.
4. PC Tools and its use.
5. Disc Managers and its use.
6. Debug and its use.
7. Working with Virus removing software and disk scan.
8. Various Viruses available and Vaccines available.
9. Connecting Mouse and Plotter and installing their driver software.
10. PC LAN installation and testing.
11. a) Setting up the File Server and Modes, Installation of LAN Card, LAN Cable laying and connectivity, Connecting Active and Passive Hub.
   b) Installing LAN OS, Configuring the LAN systems defining the File Server, Nodes and Peripherals. Tuning the LAN System, Diagnosing the proper functioning of LAN Hardware.
12. Installation of Windows NT.
Acharya Nagarjuna University  
Nagarjuna Nagar, Guntur Dist., A.P.  
B.Sc. Computer Maintenance Syllabus, CBSC from 2015  
Semester V  
PAPER VI :: PC MAINTENANCE AND TROUBLE SHOOTING

Section A

Answer ANY FIVE Questions from the following 5 * 15 = 75 marks

1. Explain IBM PC functional block diagram
2. Write the overview of PS/2 family and PS/2 system board
3. Explain System configuration & ROM BIOS
4. What are the safety precautions to be taken during troubleshooting
5. What are the reasons of failure of disk drive, display, printer, Keyboard
6. Explain the effective of dust, noise and power fluctuations on system performance
7. Explain Post sequence process.
8. Explain the self diagnosis process of reading the ROM testing