

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN COMPUTER ENGINEERING

SEMESTER- VI

Subject Name: COMPUTER MAINTENANCE

Sr. No.	Subject Content	Hrs.
1	1.0 INTRODUCTION TO COMPUTER 1.1 Definition of computer 1.2 Computer Hardware, Software and Firmware 1.3 History of computer 1.4 Classification of computer 1.5 Basic parts of Digital computer 1.6 Difference between PC, PC-XT and PC-AT 1.7 General faults of computer system	2
2	2.0 MOTHERBOARD 2.1 Types of motherboard 2.2 Functional block diagram of Motherboard 2.3 CPU and supporting chips 2.4 BIOS 2.5 CMOS setup 2.6 Types of Buses on the motherboard 2.7 Jumper setting on motherboard 2.8 Connectors on motherboard 2.9 Battery on Motherboard 2.10 Faults of Motherboard	4
3	3.0 STORAGE DEVICES 3.1 Types of memory 3.1.1 Permanent Memory (Secondary storage device) 3.1.2 Temporary Memory (Random Access Memory) 3.1.3 Read Only Memory 3.1.4 Cache Memory 3.1.5 Flash Memory(USB flash Drive) 3.1.6 Faults of RAM & Flash Drive 3.2 Hard Disk Drive 3.2.1 SCSI 3.2.2 IDE 3.2.3 SATA 3.2.4 USB	5

	<p>3.2.5 Hard Disk Drive Installation process</p> <p>3.2.6 Preparation of Hard Disk Drive for software Installation (Hard Disk Partitioning and Formatting)</p> <p>3.2.7 Faults of Hard Disk Drive</p> <p>3.3 CD-ROM Drive : Write once and Rewritable</p> <p>3.3.1 CD-ROM Drive Installation</p> <p>3.3.1 Faults of CD-ROM Drive</p> <p>3.4 DVD Drive</p> <p>3.4.1 DVD Drive installation</p> <p>3.4.2 Faults of DVD Drive</p> <p>3.5 Floppy disk Drive</p> <p>3.5.1 Types of floppy Disk Drive</p> <ul style="list-style-type: none"> • 1.2 MB Floppy Disk Drive • 1.44 MB Floppy disk Drive <p>3.5.2 Installation of Floppy Disk Drive</p> <p>3.5.3 Faults of Floppy Disk Drive</p>	
4	<p>4.0 KEYBOARD AND MOUSE</p> <p>4.1 Types of keyboard</p> <p>4.1.1 Wired Keyboard</p> <ul style="list-style-type: none"> • DIN type Keyboard • PS/2 type Keyboard • USB Keyboard <p>4.1.2 Wireless Keyboard</p> <ul style="list-style-type: none"> • Bluetooth keyboard • Infrared(IR) Keyboard • Radio Frequency Keyboard <p>4.2 Types of Keyboard Switches</p> <p>4.3 Faults of Keyboard</p> <p>4.4 Types of Mouse</p> <p>4.4.1 Wired Mouse</p> <ul style="list-style-type: none"> • Serial Port Mouse • PS/2 type Mouse • USB Mouse <p>4.4.2 Wireless Mouse</p> <ul style="list-style-type: none"> • Bluetooth Mouse • Infrared(IR) Mouse • Radio Frequency mouse <p>4.5 Faults of Mouse</p>	2
5	<p>5.0 PRINTER</p> <p>5.1 General Features of Printer</p> <p>5.2 Classification of Printer</p> <p>5.2.1 Impact Printer</p> <ul style="list-style-type: none"> • Dot Matrix Printer • Line Printer <p>5.2.2 Non Impact Printer</p>	4

	<ul style="list-style-type: none"> • Thermal Printer • Inkjet Printer • Laser Printer <p>5.3 Faults of Printer</p>	
6	<p>6.0 DISPLAY UNIT</p> <p>6.1 Types of Monitor</p> <p>6.1.1 CRT Monitor</p> <p>6.1.2 LCD Monitor</p> <p>6.2 Faults of Monitor</p>	4
7	<p>7.0 POWER SUPPLY</p> <p>7.1 SMPS</p> <p>7.1.1 Working Principle of SMPS</p> <p>7.1.2 Block Diagram of SMPS</p> <p>7.1.3 Difference Between Linear power supply and UPS</p> <p>7.1.4 Output Connectors of SMPS</p> <p>7.1.5 Faults of SMPS</p> <p>7.2 UPS</p> <p>7.3 Stabilizer</p>	3
8	<p>8.0 OTHER INPUT/OUTPUT DEVICES</p> <p>8.1 Scanner</p> <p>8.2 Plotter</p> <p>8.3 Speaker</p> <p>8.4 Microphone</p> <p>8.5 Web Camera</p> <p>8.6 Joy Stuck</p> <p>8.7 Light Pen</p> <p>8.8 Bar code Reader</p> <p>8.9 MODEM</p> <p>8.9.1 Internal MODEM</p> <p>8.9.2 External MODEM</p> <p>8.10 Faults of Input/Output Devices</p>	6
9	<p>9.0 TROUBLESHOOTING AND REPAIRING OF COMPUTER</p> <p>9.1 Requirement of computer maintenance</p> <p>9.2 Types of Computer Maintenance</p> <ul style="list-style-type: none"> • Preventive Maintenance • Breakdown Maintenance <p>9.3 Troubleshooting Strategy and skill</p> <p>9.4 Systematic Troubleshooting</p> <p>9.5 Types of Computer Faults</p> <p>9.6 Nature of Computer Faults</p> <p>9.7 Layman Checks for troubleshooting of faulty computer system</p> <p>9.8 Diagnostic software</p> <p>9.9 POST</p> <p>9.10 Symptom observation</p>	7

	9.11 Symptom Analyses 9.12 Fault Rectification 9.13 Fault Elimination 9.14 Testing and Measuring Instruments 9.14.1 Multimeter 9.14.2 C.R.O. 9.14.3 Logic Probe 9.14.4 Logic Pulser 9.14.5 Current Tracer 9.14.6 Logic Analyzer	
10	10.0 ASSEMBLING THE COMPUTER SYSTEM 10.1 Study of configuration of computer system 10.2 Introduction of Computer assembling 10.3 Instruction for assembling the computer system 10.4 Instruction for disassembly the computer system 10.5 Calculation of power supply requirement for the computer laboratory 10.6 Calculation of A.C. requirement for the computer laboratory 10.7 Calculation of UPS requirement for the computer laboratory	3
11	11.0 PREPARATION OF COMPUTER CENTRE 11.1 Prepare List of Hardware required for computer centre 11.2 Calculation of power supply requirement for computer centre 11.3 Calculation of A.C. requirement for computer centre	2
	Total	42

NOTE:- Following are the minimum experiences required, but the college can do more experiences if possible.

Laboratory Experiences:	Hrs.
(1) Study of Maintenance Kit	4
(2) Introduction of Computer Peripherals	2
(3) Disassembling Faulty Computer system	2
(4) Reassembling Computer system	2
(5) Troubleshooting and Repairing of motherboard and Components on Motherboard	2
(6) Troubleshooting and Repairing of Keyboard and Scanner	2
(7) Troubleshooting and Repairing of Printer	2
(8) Troubleshooting and Repairing of Hard Disk Drive	2

(9)	Troubleshooting and Repairing of CD-ROM drive/ CD-Writer/Combo Drive/DVD writer	2
(10)	Troubleshooting and Repairing of Pen drive	2
(11)	Troubleshooting and Repairing of Speaker and Web camera	2
(12)	Troubleshooting and Repairing of Mouse and SMPS	2
	Total	----- 28

Reference Books:

- (1) The complete PC update and maintenance guide by Mark
Minasi
- (2) IBM PC and clones by Govind Rajalu
- (3) Literature Survey using Net