

Certificate Course in Electronics Hardware Maintenance
(Add on Course for B.A\B.Sc\B.Com)

Examination Scheme for Year 2010-11

1st Year Electronics Hardware Maintenance (Certificate Course)

S.No.	Course Certificate Course	Schedule for Teaching	Schedule of Examination
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1.

Subject: Certificate Course in Electronics Hardware Maintenance-Theory

NOTE: There will be eight questions in total and only five questions are to be attempted. There will be four periods of theory classes and eight periods of practical classes weekly.

1. Basic Electronics

Concept of electronics, application of electronics in various fields, modern trends, Advantages, analog and digital electronic, manufacturing methods using PCB and SMD technologies.

4 Periods

2. Hardware Maintenance Concepts

Identification, Specification and uses of hand tools, Soldering techniques, electrical and electronic symbols, safety features of electrical appliances and equipments, Danger of shock and fire.

4 Periods

3. Elementary Concepts

Conductor, Insulator and semiconductor classification, Voltage, current, resistance, power, energy. Voltage source, Dry cells, battery, Fuses-types & ratings, MCB.

8 Periods

7. Capacitance

Explanation of capacitance, Classification of capacitors with specification,

8 Periods

15. Maintenance of electronic and electrical gadgets

Working and testing of dc adaptors for various electronic gadgets, Voltage stabilizers of Air conditioner, refrigerator and television. Working of florescent tube light, Fan regulator, Door bell, fancy lights. Working of heating element based gadgets like electric Iron, Oven, room heater, blower, immersion rod,

Subject: Certificate Course in Electronics hardware Maintenance-Practicle

1. Demonstration of assembled printed circuit board and components.
2. Demonstration and uses of hand tools, screw driver, pliers, threading tools, drilling machine, soldering and de-soldering practice.
3. Identification of conductors and insulators.
4. Practice of simple series and parallel circuits to measure

Diploma Course in Electronics Hardware maintenance(2nd year)
(Add on Course for B.A\B.Sc\B.Com)

Examination Scheme for Year 2010-11

2nd Year Electronics Hardware Maintenance (Diploma Course)

S.No.	Course	Schedule for Teaching				Schedule of Examination		
		L	T	P	Total	Theory Marks	Practical Marks	Total Marks
1.	Diploma Course in Electronics Hardware Maintenance	4	-	8	12	150	50	200

Subject: Diploma Course in Electronics Hardware Maintenance-Theory

NOTE: There will be eight questions in total and only five questions are to be attempted. There will be four periods of theory classes and eight periods of practical classes weekly.

1. Personal Computers & Peripherals

The central processing unit, CPU speeds, word size, data path, cache memory, memory types, system clock, power supply, keyboard, mouse, video adaptors, SCSI, Floppy disk controller and Disc drives, CDROM Drives, Hard disk interfaces, Modems and Communication Ports, LAN Adapters, sound cards.

(14 periods)

2. Preventive Maintenance of PC

Heat and thermal shock, safe temperature range for PCs, Removing heat, Good and bad box designs, Dealing with dust, Magnetism, stray electromagnetic interference, power noise, avoiding exposure to water and liquids, making environment PC-friendly.

(8 periods)

3. Power supplies and Power Protections

Components of SMPS, power supply connections, upgrading power supply, Troubleshooting the power supply, replacing the power supply, checking outlet wiring, solutions to power problems.

(8 periods)

4. Installing and maintaining storage Devices

Steps in hard drive installation, System's CMOS configuration, Hard disk software installation, partitioning, DOS formatting, Backing up hard disk drives, computer virus, detection & clearing virus, suggestions for keeping virus away, keeping uptodate with new virus. Floppy drives, removing, configuring and installing floppy drives, pen drive.

(12 periods)

5. Installing and Troubleshooting printers

Parallel, serial & USB ports, Laser, inkjet, dot matrix, daisy wheel, thermal printers, cables, port problems, software problems, printer driver.

(10 periods)

6. Peripherals installation & Troubleshooting printers

Keyboard components, connectors, cable continuity, disassembling keyboard, Mouse types, mouse cleaning & maintenance, Modems & serial interfaces, video

card characteristics, video troubleshooting, sound cards, CD-ROM installation,

Subject: Diploma Course in Electronics Hardware Maintenance (Practical)

1. Identification of computer peripherals and motherboards
2. Familiarization with peripheral cards and communication ports.
3. Demonstration of pre-installation : PC-friendly-environment planning
4. Installation of SMPS and identification of power supply connectors using colour code.
5. Estimating the SMPS power requirement for the PC. Replacing or upgrading the SMPS.
6. Installation of hard disk, floppy disk and CD drives.
7. Formatting and logical partitioning of hard disk drives.
8. Backing up data from Hard disk drive to Floppy/CD disk drive.
9. Familiarization with anti virus software, detecting and cleaning virus.
10. Installing a printer and printer driver.
11. Installing an internal or external modem.
12. Familiarization with basic and advance key board functions.
13. Installing windows operating system.
14. Installing LINUX operating system.
15. Installing windows/LINUX operating system based application software.
16. Putting together the PC: the motherboard, the essential drives, monitor, mouse and key board etc. and test run the PC.

Advanced Diploma Course in Electronics Hardware Maintenance(3rd Year)
(Add on Course for B.A\B.Sc\B.Com)

Examination Scheme for year 2010-11

3rd Year Electronics Hardware Maintenance(Advanced Diploma Course)

S.No.	Course	Schedule for Teaching				Schedule of Examination		
		L	T	P	Total	Theory Marks	Practical Marks	Total Marks
1.	Advanced Diploma Course in Electronics Hardware Maintenance	4	-	8	12	150	50	200

Subject: Advanced Diploma Course in Electronics Hardware Maintenance-Theory

Note: There will be eight questions in total and any five questions are to be attempted. There will be four periods of theory classes and eight periods of practical classes weekly.

1. LAN Networking:

Networks in the workplace, Network topologies, Peer to peer Network, switches, Routers and Gateways, cabling in network hardware.

16 periods

7. Mobile Connectivity

Introduction to mobile telephone, setup procedure, preventive maintenance of mobile sets, mobile phone servicing and related technical information, mobile interfacing connector using Bluetooth interface, USB message interface, camera interface.

14 periods

Recommended Books:

1. Local Area Networks by Robert M. Thomas, BPB publications.
2. UPS,12V by Er, M.L. Chandna, Gurukul Technicals Institutes (English Medium)
3. MOSFET Inverter by K.C. Agarwal, Micropublications, Aligarh (English Medium)
4. Electronics projects 21 by EFY, ISO 9001-2000 certified.
5. Mordern STD-PCO Monitor servicing by Manohar Lotia, BPB Publications.
6. Mobile phone compiled by S.K Gupta.
7. Modern Mobile phone Repair by Manohar Lotia, Pradeep Nair, Shailesh Tank..
8. Audio Troubleshooting and repair, BPB Publications.
9. User Manual of Adobe Photoshop Software.

**Subject: Advanced Diploma Course in Electronics Hardware Maintenance
(Practical)**

1. Learning various LAN network topologies.
2. Installing switches, hubs in LAN networking and understanding types of cables used in networks.
3. Use of firewall in connecting network.