BHARATHIAR UNIVERSEITY, COIMBATORE.

DIPLOMA IN HARDWARE AND NETWORKING

(for Community College)

(for the candidates admitted form the academic year 2010-11 onwards)

SCHEME OF EXAMINATIONS

S. NO	SUBJECT NAME	Marks
1	COMPUTER HARDWARE	100
2	BASICS OF HARDWARE & COMMUNICATION SKILLS	100
3	ADVANCED HARDWARE CONCEPTS	100
4	BASICS OF NETWORKS	100
5	Practical: HARDWARE & NETWORK LAB	100

PAPER - I : COMPUTER HARDWARE

UNIT - 01
FUNDAMENTAL OF COMPUTER:
Block diagram and brief introduction of each block. Types of computers.

UNIT - 02
PERSONAL/ MICRO COMPUTERS : PC,Main Parts : CPU Box, Monitor, & Peripherals [Keyboard, Mouse, Speaker]. Inside CPU Box: Motherboard, I/O Cards, Cables, Floppy Drivers, HDD, CD-Drive.

MOTHER BOARD IN DETAIL: Nomenclature, technology, standards AMD CPUs, Cyrix CPUs. CPUs: CPU over clocking, troubleshooting, CPU problems. Chip Sets: AMD chip sets, Intel chip sets, VIA chip sets SIS. chip sets, OPTI chipsets, Legacy and support ICS.

UNIT – 03
MEMORY: Basic Concept - Types of Memory - RAM and ROM
Memory Chips: RAM and ROM EPROM. Memory Modules and packaging, Logical and Physical organization of memory in computer. Cache Memory - LX and LZ, EDO. Various terms used in computer memory.

UNIT - 04
PC-ASSEMBLY AND CMOS SETUP AND TROUBLESHOOTING:
Observation of all parts of Floppy drives, HDD, CD, and SMPS. Identification of cables and computers. Mounting Motherboard in cabinet Installation of cards, devices and then connecting cables. Fitting of cabinet. CMOS – Setup Troubleshooting.

UNIT - 05 :
BASIC OF PRINTERS: Types of printers and printing mechanism, How printer works
Inject printer, working of laser printer, Fonts/Type faces, Trouble shooting printers.

Text Books:
(01) Hardware bible By : Winn L Rosch, Techmedia publications
(02) Trouble shooting, maintaining and repairing PCs By :
Stephon J Bigelow Tata McGraw Hill Publication
(03) Modern All about printers By : Manohar Lotia, Pradeep
Nair, Bijal Lotia BPB publications.

PAPER – II BASICS OF HARDWARE & COMMUNICATION SKILLS

UNIT – I

Number systems – Decimal, Binary, Octal, Hexadecimal – Conversions– LOGIC GATES – Universal GATES – NAND - NOR – Karnaugh maps -Tabulation and Simplifications-Basics of Sequential and Combinational logic – Multiplexer and Demultiplexer basics - GRAY code – ASCII code representation

UNIT –II

Introduction to Memories – Types of memories – Registers – Caches – Primary and Secondary memory - Associative memory – Virtual memory– Optical discs – Flash memory systems

UNIT-III

Basic computer hardware architecture - Functional units – Instruction formats – types – Addressing modes- Basic I/O devices – Keyboard –Console systems – Mouse – Printer – plotters – Scanners – Basic CPU architecture

UNIT-IV

Introduction to 8085 microprocessor-Internal Architecture, Pin Layout- Interfacing Memory -Instruction Set of 8085-Addrerssing modes-Basic programming using 8085.

UNIT-V

Applying for a job. Cover Letter, Resume-Interview skills, Group discussion, Soft skills. Inter & Extra Personal skills. Problem solving-Reflective thinking-Critical thinking-Negotiation Skills-Entrepreneurial Skills, Team working skills, Management & Professional ethics & Morals. Leadership Skills

References

1. Charles H.Roth Jr. Fundamentals of Logic design – 4th edition – Jaico publishing house
2. Hayes – Computer Architecture and organization – TMH 1998
3. Carl Hamacher.V., Zvonko G. Vranesic, Safwat G.Zaky “Computer organization” TMH
4. Thomas C.Bartee Computer architecture and Logic design TMH 1997
5. Gaonkar – Micro Processor Architecture programming and application with 8085.

PAPER III ADVANCED HARDWARE CONCEPTS

UNIT – I
Keyboard and mouse interfaces, Display - Video and LCD displays - CRT controller - Graphics controller, Audio / Video cards, printers, Interface standards – Serial- PS2

UNIT-II
Floppy Disks - Controllers and Standards - Hard disks - Formats, Controllers and Interface Standards-SCSI-PCI-ATA-XTA- High capacity Magnetic storage techniques - RAID.

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

UNIT-IV
Standards in PC Architecture – BUS standards, System Bus, communication Interface, Plug and play Systems.

UNIT-V
Hardware and Software diagnostic tools –Benchmarks –Toy Benchmarks - Power on self test - Data recovery utilities.

References
1. Mueller.S, Upgrading and repairing PCS, 4th Edition, Prentice Hall, 1995.
2. Govindarajulu.B, IBM PC and Clones Hardware trouble shooting and maintenance McGraw Hill, 1993.
3. Rosch, Winn Rosch Hardeare Bible, 2nd Edition, B.P.B, Publication Ltd.,1996.
4. D.V.Hall, Microprocessors and Interfacing Programming and Hardware, Mc Graw Hill,1986.

PAPER IV BASICS OF NETWORKS

BASICS OF NETWORKS

UNIT - I
Communication model - Data communications networking – Data transmission concepts and terminology- Protocol architecture - Protocols - OSI - TCP/IP - LAN architecture -Topologies - MAC - Ethernet, Fast Ethernet, Token ring, FDDI, Wireless LANS.

UNIT-II
Network layer - Switching concepts - Circuit switching networks -Packet switching - Routing - Congestion control - IP – Unreliable connectionless delivery - Datagram's - Routing IP datagram's - ICMP.

UNIT-III
Transport layer - Reliable delivery service - Congestion control -connection establishment - Flow control - Transmission control protocol - User datagram protocol.

UNIT-IV
Applications - Sessions and presentation aspects - DNS, Telnet, rlogin,FTP, SMTP – WWW-Basics of Firewalls

UNIT-V
Frame Relay-Packet switching networks-Frame Relay networks, Asynchronous transfer mode-ATM protocol Architecture-ATM Logical connection-ATM cells-ATM service categories – ATM adaption layer(AAL)

References:
1. Larry L.Peterson & Bruce S.Davie, Computer Networks - A systems Approach, 2nd edition, Harcourt Asia/Morgan Kaufmann, 2000.
2. William Stallings, Data and Computer Communications, 5th edition, PHI,1997.

PRACTICAL - HARDWARE & NETWORK LAB

1) Connecting & disconnecting computer peripherals and components & driver installation

2) Hard disk partitioning and formatting

3) OS installation like Windows 95, 98, 2000, 2003, XP, 7

4) OS installation like FAT, NTFS

5) Internal component assembling and dissembling

6) Basic trouble shoots using beep Sound

7) Dual OS installation

8) Assigning and identifying valid IP Addresses.

9) Configure network computers using switch

10) Installation of Network Interface Card (NIC).