0944 -DIPLOMA IN INFORMATION TECHNOLOGY & ENGINEERING
SEMESTER -IV
094445 - COMPUTER ORGANISATION
(Common with Computer Engineering)

RATIONALE

The subject provides the students with the knowledge of detailed organization of currently available personal computers in order to understand their functioning and maintenance. The students will also get familiar with different types of motherboards, architectures and bus standards. The single user system based on 486, Pentium MMX, Pentium-II, Pentium-III and Pentium-IV will get emphasis.

Note: List of practicals has been given only as guide lines for students to learn, not for examination.

DETAILED CONTENTS

1. Review

Salient features and block diagram of 486, Pentium MMX and Pentium-II, Pentium-III and Pentium-IV

2. Hardware Organization of PC

The motherboard of PC; Pentium, CPU, memory organization, keyboard interfacing, interfacing of audio speakers, serial and parallel ports

3. Bus Standards and Architectures

ISA, EISA, VESA and PCI

2. Interface Standards

RS232, IDE, EIDE, SCSI-II, Fast and wide SCSI, IEEE 488

3. The Basic Input/Output System

What is BIOS? Function of BIOS, software interrupts, testing and initialization, configuring the system

4. Introduction to RISC Processors

What is RISC technology? Different RISC processors available

5. Bus Architecture and Mini Computers

VME and Multi bus

6. Architecture of multiprocessor system

LIST OF PRACTICALS

1. To identify various components, devices and sections of computer.
2. To Study of motherboards
3. To interconnect the system unit with the video monitor, mouse and key board and test the operation of the computer.
4. Identification of chipsets and functional aspects of different subsystems on each card
5. To connect various add on cards and I/O devices to a computer motherboard and test their working
6. Study of the bus system and identifying various signal lines
7. To note the voltages and waveforms at various terminals in the I/O channel (Bus Slots)
8. Study of peripherals used, their speeds and capacities

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INSTRUCTIONAL STRATEGY

Since this subject is theoretical one, the practical aspects should be taught along with the theory

instruction. The students be given quiz tests and asked to give seminars on small topics. List of practicals has been given only as guide lines not for examination. There is sufficient time in this subject students may be taken to laboratory for demonstration.

RECOMMENDED BOOKS

1. Computer Architecture by Rafiquzzaman, M; Prentice Hall of India, New Delhi.
2. Fairhead – 80386/80486 BPB Publications, New Delhi
3. Hardware and Software of Personal Computers by Bose, SK; Willey Eastern Ltd., New Delhi
4. Structured Computer Organisation by Tanenbaum, Andrew S.; Prentice Hall of India, New Delhi.
5. Upgrading and Preparing PCs by Scott Muller, Tec media Publications
6. Computer Organisation and Architecture by Linda Labur, Narosa Publishing House Pvt. Ltd. Darya Ganj, New Delhi