

BCA- S104: Computer Organization

UNIT-I

Overview of electronics:

Electronic components – Register, Capacitor and Inductors, Semiconductor devices – Diodes, Transistors (BJT and FET). Analog vs Digital electronics, Transistor as a switch. Integrated circuits, SSI, MSI, LSI, and VLSI circuits. Multivibrators – astable, bistable, monostable, counters ripple and decade, edge and level triggering.

UNIT-II

Building blocks of computer system:

Basic building blocks – I/O, Memory, ALU and its components, Control Unit and its functions, Instruction –word, Instruction and Execution cycle, branch, skip, jump and shift instruction, Operation of control registers; Controlling of arithmetic operations;

UNIT-III

Addressing techniques and registers:

Addressing techniques – Direct, Indirect, Immediate, Relative, Indexed addressing and paging. Registers – Indexed, General purpose, Special purpose, overflow, carry, shift, scratch, Memory Buffer register; accumulators; stack pointers; floating point; status information and buffer registers.

UNIT-IV

Memory:Main memory, RAM, static and dynamic, ROM, EPROM, EEPROM, EAROM, Cache and Virtual memory.

UNIT- V

Interconnecting System components:

Buses, Interfacing buses, Bus formats – address, data and control, Interfacing keyboard, display, auxiliary storage devices and printers. I/O cards in personal computers.

Introduction to Microprocessors and Microcontrollers: introduction to 8085 micropocesor, examples of few instructions to understand addressing techniques. Difference between microprocessor and microcontrollers.

Recommended Books

1. Andrew S. Tanenbaum , Structured Computer Organization,Printice Hall
2. William Stallings, Computer Organization and Architecture , Sixth Edition, Pearson

PRACTICAL

BCA S105: Practical-I: Computer Hardware Laboratory
Practical based on Paper-I & paper-IV

BCA S106: Practical-II: ICT & Software Laboratory:
Practical based on Paper-II & paper-III

BCA S107: Practical-III: Language Laboratory (Audit Course)
Practical training in Spoken English using Language Lab software like
Linguaphone

BCA-S108: **Seminar**: Seminar topics to be allotted in the beginning of the course by issuing schedule of seminars including faculty seminars