

# **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