**ADITYA DEGREE COLLEGES**

**ANDHRA PRADESH**

**MID – 1 SYLLABUS**

**B.SC. ELECTRONICS**

**SEMESTER – I**

**BASIC CIRCUIT THEORY**

**UNIT- 1:**

**SINUSOIDAL ALTERNATING WAVEFORMS:**

Definition of current and voltage. The sine wave, general format of sine wave for voltage or current, phase relations, average value, effective (R.M.S) values. Differences between A.C and D.C. Basic elements and phasors: V-I relations of R, L & C elements, frequency response of basic elements. (problems)

**UNIT-II:**

PASSIVE NETWORKS: (D.C) Kirchhoff’s current and Voltage Law’s ,Resistor, Capacitor, and Inductor, series and parallel networks. Mesh Analysis, Nodal Analysis, star to delta and delta to star conversions.

**UNIT-III:**

**NETWORKS THEOREMS: (D.C)**

Superposition Theorem, Thevenin's Theorem, Norton's Theorem,

**SEMESTER - III**

**ELECTRONICS**

**DIGITAL ELECTRONICS**

**Unit – I**

NUMBER SYSTEM AND CODES: Decimal, Binary, Hexadecimal, Octal, BCD, Conversions,

Complements (1’s and 2’s,), Addition, Subtraction, Gray, Excess-3 Code conversion from one

to another.

**Unit- II**

BOOLEAN ALGEBRA AND THEOREMS: Boolean Theorems, De-Morgan’s laws. Digital

logic gates, NAND & NOR as universal gates. Standard representation of logic functions (SOP

and POS), Minimization Techniques (Karnaugh Map Method: 4 variables),don’t care condition.

**Unit-III**

**COMBINATIONAL DIGITAL CIRCUITS**:

Adders-Half & full adder, Subtractor-Half and full subtractors, Parallel binary adder.

Multiplexers (2:1,4:1)) and Demultiplexers (1:2,4:1),

**SEMESTER – V**

**PAPER V - MICROPROCESSORS**

**UNIT- I**

**ARCHITECTURE OF 8085 MICROPROCESSOR**

Functional block diagram of Intel 8085-Register structure- multiplexing & Demultiplexing of

address / data bus - Control Signal Generation and status signals - 8085 pin-out diagram &

functions - Interrupts - Priority Concept

INSTRUCTION SET OF 8085 -Instruction set classification - addressing modes

**UNIT - II**

MEMORY-Instruction cycle - machine cycle - T-state -Timing diagrams for Opcode Fetch

Cycle Memory Read, Memory Write, I/O Read, I/O Write, - Functional explanation for RAM,

ROM, EPROM

**UNIT- III**

PROGRAMMING 8085- addition & subtraction(16-bit), multiplication, division

**PAPER VI - ELECTRONIC COMMUNICATIONS**

**UNIT- I**

**BASICS OF COMMUNICATION SYSTEMS AND NOISE**

Block diagram of communication system. Types of Electronic Communication systems: Simplex, Duplex. Analog /Digital Signals. Noise in communication: External noise-Atmospheric, space noise, man-made noise, internal noise- Thermal, Shot noise Definitions and relationship between Bit rate, Band rate, Bandwidth and signal to Noise Ratio.

**UNIT - II**

**AMPLITUDE MODULATION**

Need for modulation. Amplitude modulation, Modulation index, frequency spectrum, generation of AM (balanced modulator,), Amplitude Demodulation (diode detector), other forms of AM: Double side band suppressed carrier, DSBSC generation (Balanced modulator), Single side band suppressed carrier, SSBSC generation (Filter method, phase cancellation method, third method), SSB detection, Introduction to other forms of AM (Pilot carrier modulation, Vestigial side band modulation).

**UNIT- III**

**ANGLE MODULA TION**

Frequency and phase modulation, modulation index and frequency spectrum, equivalence between FM and PM