SYLLABUS

UNIT - I : Networks, Antenna and Propagation

Networks: Symmetrical and asymmetrical networks, characteristic impedance and propagation constant.

Equalizer: Definition, types and applications.

Attenuator: Definition, types - symmetrical T and Pi attenuators- simple problems – applications.

Filters: Definition, types – circuit elements and cutoff frequencies of LPF, HPF and BPF - simple problems- applications.

Antennas: Definition-types of antenna: Mono pole and dipole antenna, directional and omni directional antenna ,Dipole arrays, Yagi antenna, parabolic antenna-Antenna parameters: directive gain, directivity, radiation pattern and polarization-applications.

Propagation: Ground wave propagation, sky wave propagation and space wave propagation

UNIT - II : Introduction to Modulation and Amplitude Modulation

Introduction to Modulation: Definition- Need for modulation- types of modulation - Frequency spectrum - relationship between wavelength and frequency.

Amplitude modulation: Definition - Simple signal diagram for amplitude modulation, Expression for amplitude modulation, expression for modulation index – sidebands: DSB,SSB and VSB.

AM Transmitter: Types of transmitters : high level AM transmitter, low level AM transmitter and SSB transmitter.

AM Receiver: Types of receiver: TRF receiver, super heterodyne receiver and SSB receiver.- Selection of IF- AGC types: simple and delayed AGC.

UNIT - III : Frequency and Pulse Modulation

Frequency modulation: Definition-Simple signal diagram for frequency modulation, Expression for frequency modulation, expression for modulation index.

FM Transmitter: Types of transmitters : Direct FM transmitter, Indirect FM transmitter and stereophonic FM transmitter.

FM Receiver: stereophonic FM receiver-AFC. Comparison of FM and AM.

Pulse modulation: Definition- Types: Generation and detection of PAM, PWM, PPM,PCM & DPCM.

UNIT - IV : Audio systems

Microphones: Definition-Construction and performance of the following microphones: carbon, condenser, piezo-electric, moving coil and velocity ribbon.

Loud speakers: Definition-Constructional details of dynamic cone type, Horn type and electro-static loud speakers, woofer, midrange and tweeter, cross-over network. Surround-sound systems.

Audio recording and reproduction: Compact disc system- MP3 system - DVD system - stereophonic system - Hi-Fi system principles-DTS.

UNIT - V : Video systems

Monochrome Television: Scanning principles - synchronization - aspect ratio- composite video signal- TV broadcasting standards. TV transmitter- TV receiver.

Color TV : Principles of color transmission and reception- color CCD camera, LCD, LED display unit – plasma display - Principles of Handy cam, CCTV and cable TV.