EE-503: Communication Systems

Credit	L	T	P
3	**2**	**1**	**-**

UNIT-I
Need for modulation, Amplitude modulation, modulation index, SSB-SC, DSB-SC and vestigial
side band: generation and detection, Calculation of power.

UNIT-II
Concept of frequency and phase modulation, frequency deviation and modulation index. FM spectra, carlson'srule.Generation of Narrow-band and Wide-band FM: Armstrong method, direct method and indirect method. Demodulation of FM.

UNIT-III
Sampling theorem, time-division multiplexing, pulse modulation, pulse width modulation (PWM), pulse position modulation (PPM), pulse code modulation (PCM), quantization, encoding, quantization error, companding and expanding, delta-modulation and adaptive delta modulation, performance of digital systems.

UNIT-IV
TRF receiver, disadvantages of TRF receiver, superheterodyne, advantages, performance of radio receivers, sensitivity, image frequency and its rejection, double spotting, AGC, AFC, AMand FM transmitters, their elementary circuits and block diagram representations.

UNIT-V
Introduction, optical fiber v/s metallic cable, Types of optical fiber: step index and graded index,multimode and single mode, Attenuation and dispersion in fibers, LEDs and Laser diode, Opticaldetectors: PIN and APDs, optical sources, optical coupling, splicing.

TEXT/REFFERENCE BOOKS

1. Simon Haykin, "Communication Systems", New Age International, New Delhi.
2. B. P. Lathi, "Communications Systems", New Age International, New Delhi.
3. George Kennedy, "Electronic Communication Systems", McGraw Hill Book Co., Singapore.
4. Herbert Taub and Donald L.Schilling, "Principles of Communication Systems", McGraw Hill, Kogakusha Ltd., Tokyo.
5. WayeTomasi, "Electronics Communication System", Pearson Education India.