

AMTC13 DIGITAL COMMUNICATION

UNIT-1 ELECTRONIC COMMUNICATION SYSTEM

- 1.1 Introduction, Contaminations, The Audio Spectrum, Signal Power Units, Volume Unit , Signal-To Noise Ratio, Modulation,
- 1.2 Fundamental Limitations In A Communication System, Number Systems

UNIT-2 AMPLITUDE MODULATION

- 2.1 Definition of am, generation of am wave, double-sideband suppressed-carrier modulation,
- 2.2 Single-sideband modulation (ssb), vestigial sideband modulation (vsb), demodulation of am.

UNIT-3 EXPONENTIAL MODULATION1 FREQUENCY MODULATION

- 3.5 Frequency spectrum of frequency modulation, comparison of fm and am, frequency modulation band widths,
- 3.6 Narrow band and wide band frequency modulation (nbfm and wbfm), phase modulation, generation and detection principle, fm demodulation: am-based method.

UNIT-4 SAMPLING AND ANALOG PULSE MODULATION

- 4.1 Sampling Theory, Sampling Analysis, Types Of Sampling, Practical Sampling:
- 4.2 Major Problems, Types Of Analog Pulse Modulation, Pulse Amplitude Modulation,
- 4.3 Pulse Position Modulation, Signal-To-Noise Ratios In Pulse Systems

UNIT-5 DIGITAL DATA TRANSMISSION

- 5.1 Representation of data signal, parallel and serial data transmission, 20ma loop and line drivers, modems, data signal: signal shaping and signaling speed,
- 5.2 Partial response (correlative) techniques, noise and error analysis, repeaters, digital-modulation systems, amplitude-shift keying (ask), frequency.shift keying (fsk), four-phase or quaternary psk, interface standards

UNIT-6 DIGITAL MODULATION: DM AND PCM

- 6.1 Delta modulation, pulse. Code modulation., pcm bandwidth, pcm reception and noise, quantization noise analysis, aperture time,
- 6.2 The SN ratio and channel capacity of pcm, comparison of pcm with other systems, pulse rate, codecs, 24-channel pcm, the pcm channel bank, multiplex hierarchy, measurements of quantization noise, differential pcm

Reference Books:

1. Digital and Analog Communication Systems by K San Shanmugam
2. Communication Systems by Simon Haykin