AMEC13 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 supressed-carrier modulation,

2.2 Single-sideband modulation (ssb), vestigial sideband modulation (vsb), demodulation of am.

UNIT-3 EXPONENTIAL MODULATION1 FREQUENCY MODULATION

3.1 Frequency spectrum of frequency modulation, comparison of fm and am, frequency modulation band widths,

3.2 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), freq.uency.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