

# AMTC27 DIGITAL VOICE PICTURE COMMUNICATION

## UNIT-1 RADIO RECEIVERS

- 1.1 Introduction, Trf and Superheat receivers, AM broadcast receivers,
- 1.2 Communication Receivers, Tuning Indicator, Diversity reception, FM receivers.

## UNIT-2 NOISE

- 2.7 Introduction, External noise, Internal noise,
- 2.8 Noise in Communication system, Noise in AM, FM, and PM system,
- 2.9 Noise in pulse modulated systems.

## UNIT-3 PROPAGATION OF WAVES

- 3.1 Reflection/ refraction of radio waves, Atmospheric absorption
- 3.2 Tropospheric Scatter, Ionospheric Layers, Sky Waves,
- 3.3 Virtual Height, Regular & irregular ionospheric variations,
- 3.4 Skip distance, Primary & Secondary Service Area.

## UNIT-4 BROAD BANK COMMUNICATIONS

- 3.5 Time division multiplexing, Frequency Division multiplexing,
- 3.6 Computer Communication System, Microwave Links, Line of Sight (LOS)links,
- 3.7 Tropospheric Links, Satellite Communications
- 3.8 Choice of Orbit FDMA, TDMA, SPADE, Optical Communications
- 3.9 Modulation and Detection, Integrated service digital network (ISDN).

## UNIT-5 PICTURE-SIGNAL TRANSMISSION AND RECEPTION

- 5.1 Facsimile-transmission and reception, Television-scanning process, CCIR-B standards,
- 5.2 TV camera systems – image orthicon and Videocon
- 5.3 Transmission and reception principle for black and white TV signals, Principle of color TV
- 5.4 Primary colours, colour TV systems – NTSC, SECAM, PAL,
- 5.5 Transmission and reception using PAL system, PIL Picture tube.

## UNIT-6 RECORDING AND DIGITAL PROCESSING OF VIDEO SIGNALS

- 6.1 Basic Video recording principles, Recording of luminance signals,
- 6.2 Recording of Chrominance signal, Frequency range of the VHS signal, Tape loading,
- 6.3 Tape format in VHS systems, Operating modes of a video cassette recorder,
- 6.4 E-E mode, Playback mode, Digital processing of Video Signals,
- 6.5 How much digital is the Digital TV? Video processor, Audio Processing, Control Computer, CD Players

### Reference Books:

1. Principles of Digital Audio, Sixth Edition (Electronics)” by Ken C Pohlmann
2. Design for How People Learn (Voices That Matter)” by Julie Dirksen