8EC2A RADAR & TV ENGINEERING

B.Tech. (EC) 8th Sem. **Max. Marks: 100**
3L+1T **Exam Hours: 3**

Unit	Contents	Contact hours
I	**RADAR -** Radar Block diagram, frequencies and applications. Radar range equation. Continuous wave (CW) & FM radar; Moving target indicator (MTI): Delay line cancellers, blind velocity Pulse Doppler Radar. Tracking radar sequential lobbing, Conical scan and monopulse radar, Types of display, Radar receivers, Noise figure. NAVIGATIONAL AIDS - Principle of operation of Radar direction finder & range system. LORAN system, DME, TACAN, Aircraft landing systems.	10
II	T.V. systems. Block diagram of T.V. transmitters. Principles of Monochrome and colour T.V.system (PAL, SECAM, NTSC). Theory of scanning standards, Composite video signal analysis. T.V Cameras : Image orthicon, plumbicon, vidicon and CCD camera tubes. Types of Analog Monochrome and colour picture tubes,	8
III	**Processing and transmission of TV signals:** Modulation of video and sound signals, Vestigial side band transmission, Compatibility of colour and monochrome frequency interleaving & transmission of colour signals, Picture, sound and colour sub carriers. Encoding picture information. Generation of colour, colour difference and Chrominance signal modulation.TV transmission & reception antennas.	8
IV	**Basic circuits of TV RECEIVER:** Functional block diagram of T.V. receiver, R.F. Tuner, I.F. amplifier, Video detector, video amplifier, AGC, Synch. Separation, Sync. Processing and AFC. Deflection oscillators, vertical & horizontal deflection and sound system circuits. EHT generation. Common faults and their diagnosis. Basic idea of HDTV, DBS-TV and 3D-TV.	8
V	**MODERN TV SYSTEM:** Digital transmission and reception of TV signals, DISHTV, DTH and cable TV, transmission of TV signals through Satellite and Transponders, working principles of HDTV, DBS-TV, IPTV and 3D-TV. Modern TV receiver with LCD, LED and Plasma displays.	6
	Total	**40**