

Elective course (Disciplinary)

EPH- 602: PULSE AND MICROWAVE ELECTRONICS

UNIT-I

Characteristic of Pulse waveforms, rise time, fall time, duty cycle concept, tilt, R-C circuits, constant rate charging, relationship between rise time and upper cutoff frequency, relationship between fall time and tilt.

Schmitt trigger and Ramp generator : Circuit operation, designing for a given upper trigger point (UTP) and lower trigger point (LTP), speed-up capacitor, input and output characteristics, RC ramp generators.

UNIT-II

Fundamentals of microwave technology, limitations of vacuum tubes. Klystrons, Two cavity Klystron, Multi-cavity and Reflex Klystrons, Traveling wave tube, Magnetron.

Antennas: Terms and definition, Antenna gain, resistance, beamwidth and polarization, resonant & non resonant antenna, effect of ground on antennas, antenna height, directional high frequency antennas, dipole arrays, Yagi-Uda antenna, Parabolic reflector.

References :

- (1) Solid State Pulse Circuits, David A Bell PHI
- (2) Electronic Communication Systems : George Kennedy TMH
- (3) Microwave Devices & Circuits, III Edition, Samuel Y. Liao, PHI
- (4) Electronic communications systems, Wayne Tomasi, Pearson Education