

**AURCET - 2013 SYLLABUS**  
**TEST NO. 75 :: ELECTRONICS & COMMUNICATION ENGINEERING**

**(100 MARKS)**

**UNIT-I** : Fundamentals of Semiconductor Diodes, BJT, JFET'S, and MOSFETS, Small Signal analysis of Transistor Amplifiers, Multistage Amplifiers, Sinusoidal Oscillators and Feedback Amplifiers. Probability Theory, Random Variables, Statistical Averages and Random Process, Fundamentals of Boolean Algebra and Logic circuits, Combinational Logic circuits, Sequential circuits, Asynchronous Sequential Logic circuits

**UNIT-II** : Signals and its Analysis, Types of Systems, Fourier Representation of Periodic Signals, Fourier Transforms, Signal Transmission through Linear Systems, Convolution and Correlation of Signals, Sampling, Laplace Transforms and z -Transforms and their Applications, Discrete Time Signal and Systems, Discrete Fourier Transforms, FFTS, IIR Filter Design Techniques and Design of FIR Filters and Applications.

**UNIT-III** : Linear Modulation Systems, FM and Phase Modulation Systems, Radio Transmitters and Receivers, PAM, PPM, PWM, Noise in AM and FM Systems, A/D Conversion Techniques, BPSK, DPSK, DEPSK, QPSK, M- Array PSK, ASK, BFSK and MSK, Data Transmission and Spread Spectrum Modulation.

**UNIT-IV** : Coulomb's Law, Gauss Law, Faradays Law, Biot-Savrats Law, Amperes Circuit Law, Maxwell's Equations, Wave Equations and Propagation Characteristics of EM Waves in Free Space and Conducting Medium, Poynting Vector Theorem, waveguides.

**UNIT-V** : Fundamentals and Parameters of Antenna, Radiation Mechanism and Analysis of Thin Wire Antenna and Half-Wave Dipole Antenna, Types of Antennas, Linear Antenna Arrays, Array Synthesis, Microwave Components, Microwave Signal Generators and Amplifiers, Microwave Circuits, Radars and Navigational Electronics, Fundamentals of all type of Radars, Radar Applications.