

NEW Syllabus

B.Sc. Semester-VI (Pb. U.)

Paper-B : Electronics and Solid State Devices-II

Unit-I

Structure and working of JFET, characteristics, drain and transconductance curve, FET amplifier and its voltage gain, Structure and working of MOSFET.

Feedback in amplifiers, voltage gain of negative feedback amplifier, advantages of negative voltage feedback, negative current feedback circuit, emitter follower.

Theory of sinusoidal oscillations, loop gain and phase, Lead-lag RC circuit, Wein bridge oscillator.

Barkhausen criterion of sustained oscillations, positive feedback amplifier, LC oscillators, Colpitts and Hartley oscillators.

Unit-II

Operational amplifier (black box approach) : Characteristics of ideal and practical op-amp 741, open-loop and closed-loop gain, characteristics and applications- inverting and non-inverting amplifiers, adder, subtractor, differentiator and integrator, Comparator, Timer IC555, pin diagram and its applications as astable and monostable multivibrator.

Analog and digital circuits, binary numbers, decimal to binary conversions, AND, OR, NOT gates, NAND, NOR gates as universal gates, XOR and XNOR gates.

De Morgan's theorem, Simplification of logic circuit using Boolean algebra, Minterms and Maxterms, Conversion of a truth table into an equivalent logic circuit by Sum of Products method,

Analog and digital communication systems, Amplitude and Frequency modulation, Power in AM wave, generation and detection, Brief account of Satellite communication, Sky-wave communication and mobile communication.