

Lesson Plan
MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Odd Semester/Even Semester)
Session – (2025-26) Odd Semester

Name of the Teacher: Dr. R. Ridhi

Department: Department of Physics

Class: B.Sc. III Vth Semester (Non-Medical)

Subject: ELECTRONICS AND SOLID STATE DEVICES – I

S. No.	Date (Monthly)		Topics to be Covered	*Academic Activity Undertaken	
	From	To			
1	24/07/2025	30/08/2025	Concepts of current and voltage sources, Thevenin's theorem, Norton's theorem, Source conversion. CRO, Block diagram, construction and principle of working, Use of CRO for frequency, time period, special features of dual trace, phase measurements, Energy band diagrams in semiconductors, Direct and indirect semiconductors, Formula to calculate Position of Fermi level in p and n semiconductors, Barrier formation, energy band diagram of p-n junction,	(i)	Lecture method
				(ii)	Group discussion
				(iii)	Notes
				(iv)	Numerical
				(v)	Class tests
					Doubt sessions
2	01/09/2025	30/09/2025	Formula for Depletion width, Qualitative ideas of current flow mechanism in forward and reverse biased diode, v-i characteristics, static and dynamic resistance, Depletion and diffusion capacitance, zener diode, LED, photodiode and solar cell. Diode circuits, Clipping circuits, Rectification: half wave, full wave and bridge rectifiers, filter circuits (C, LC and π filters), rectification efficiency and ripple factor in LC filter,	(i)	Lecture method
				(ii)	Group discussion
				(iii)	Notes
				(iv)	Numerical
				(v)	Class tests
				(vi)	Doubt sessions
3.	01/10/2025	31/10/2025	Voltage regulation circuit using Zener diode, voltage multiplier circuits. Bipolar Junction transistors: Structure and working, different currents in transistor, switching action. Characteristics of CB, CE and CC configurations, Active, cutoff and saturation regions. Load line analysis of transistors, Q-point, Transistor biasing and stabilization of operating point, fixed bias, collector to base bias, bias circuit with emitter resistor, voltage divider biasing circuit.	(i)	Lecture method
				(ii)	Group discussion
				(iii)	Notes
				(iv)	Numerical
				(v)	Class tests
				(vi)	Doubt sessions
4.	01/11/2025	10/11/2025	Working and analysis of CE amplifier using h-parameters, current, voltage and power gain, input and output impedance. Class A, B and C amplifiers	(i)	Lecture method
				(ii)	Group discussion
				(iii)	Notes
				(iv)	Numerical
				(v)	Class tests
				(vi)	Doubt sessions

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MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Odd Semester/Even Semester)
Session – (2025-26)
Even Semester

Name of the Teacher: Dr. R. Ridhi

Department: Department of Physics

Class: B.Sc. III VIth Semester (Non-Medical)

Subject: ELECTRONICS AND SOLID STATE DEVICES – II

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
1	09/01/2026	31/01/2026	Structure and working of JEFT, characteristics, drain and transconductance curve, FET amplifier and its voltage gain, Structure and working of MOSFET. Feed back in amplifiers, voltage gain of negative feedback amplifier, advantages of negative voltage feedback, negative current feedback circuit, emitter follower	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical (v) Class tests (vi) Doubt sessions
2	01/02/2026	28/02/2026	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. Operational amplifier (black box approach): Characteristics of ideal and practical opamp 741, open-loop and closed-loop gain, characteristics and applications - inverting and non-inverting amplifiers, adder, subtractor, differentiator and integrator	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical (v) Class tests (vi) Doubt sessions
3.	01/03/2026	31/03/2026	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.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical (v) Class tests (vi) Doubt sessions
4.	01/4/2026	29/04/2026	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.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical (v) Class tests (vi) Doubt sessions

* Dates for even semester are tentative; they can be varied according to Panjab University Academic Calendar Dates.