

(Lesson Plan)

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Odd/Even Semester)
Session – (2022-2023)

Name of the Teacher: Dr. Gurjit Kaur

Department: Department of Physics

Class: B.Sc. II (Honors)

Subject: Physics of Vacuum and Low Temperature (Paper 1)

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
Odd semester				
1.	18 th August 2022	31 th August 2022	Introduction, classification of vacuum ranges, throughput, Pump speed, speed of exhaust, conductance, ultimate pressure, viscous flow, molecular flow.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems
2.	1 th Sept. 2022	30 th Sept. 2022	Pump types, Gaede oil-sealed rotating vane pump, Diffusion pump, sputter ion pumps, Gettering, types of getters, Cryogenic pumps. Types of gauges, Mcleod gauge, Pirani gauge, Measurement of ultrahigh vacuum, penning gauge.	(i) Lecture method (ii) Group discussion (iii) Notes (v) online material
3.	1 st Oct. 2022	31 st Oct. 2022	Vacuum system, Materials for vacuum system, cleaning and sealing of vacuum system, Leak detection and its location, Various methods for refrigeration, Coefficient of performance, Liquefaction of gases, Joule-Thomson effect, Principle of regenerative cooling, liquefaction of H ₂ and He.	(i) Lecture method (ii) PPT (iii) Group discussion (iv) Notes (vi) online material
4.	1 st Nov. 2022	25 th Nov. 2022	Liquefaction of nitrogen, Solidification of He. Liquid He II, Thermodynamics of λ -transition, Adiabatic demagnetization, Linde's method, Temperatures below 0.01K, Low temperature thermometry and techniques, Use of liquid air and other liquefied gases.	(i) Lecture method (ii) PPT (iii) Group discussion (iv) Notes (v) Numerical Problems

(Lesson Plan) ODD

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (*Odd Semester*)
Session – (2022-23)

Name of the Teacher: Dr Renu Bala
Department: Physics
Class: B.Sc (II) Hons
Subject: Electronics
Section (s): Hons

S.No	Date (Monthly)		Topics Covered	Academic Activity Undertaken*
	From	To		
1	18 August,2022	30 th Sep,2022	Number systems: Binary, Hexadecimal and octal number systems, Interconversions and Binary arithmetic, 2's complement arithmetic, Binary fractions and negative binary numbers, floating point representations, Codes, Error detecting and correcting codes Digital Principles and Logic: Digital signals, Positive and Negative Logic, Basic digital circuits, Basic Gates – NOT, OR, AND; Universal Logic gates: NOR, NAND; Exclusive-OR gate. Combinational Logic Circuits: Boolean Laws and De Morgan's theorems, Sum of Product method, Product of sums method, Karnaugh map (up to 4 variables).	✓ Lecture ✓ Group Discussions ✓ Class Test
2	1 st Oct,2022	31 st Oct,2022	Sequential circuits: Flip-flops – RS, JK, D, clocked, race-around conditions in JK flip-flop, master slave JK, Shift registers: serial in serial out, serial in parallel out, parallel in parallel out (only up to 4 bits) Circuit Theory: Voltage sources, Current sources, Capacitors,	✓ Lecture ✓ Group Discussions ✓ Class test

			Inductors, Linear circuits, KCL, KVL, Mesh and Node analysis, Level shifting, Thevenin and Norton equivalent circuits, Power and energy relationships in case of R, L and C, Maximum Power Transfer Theorem, Series and parallel connection of mutually coupled coil, Equivalent circuit of transformer.	
3	1 st Nov,2022	25 th Nov,2022	Transducers: Electrical transducers, Resistive transducers – Resistive position transducer, Strain gauge, Resistance thermometer, Platinum thermometer, Thermistor. Inductive transducers – Differential output transducers, LVDT, Pressure inductive transducer. Capacitive transducers, Piezo electric load cell, Thermocouple transducers	<ul style="list-style-type: none"> ✓ Lecture ✓ Assignments ✓ Mid-term test

*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc.
Other Methods adopted by the teacher – Please write the specific teaching method