

Lesson Plan

Name of College : Government College for Women, Shahzadpur (Ambala)

Academic Session : April-July (2021-22)


Class : B.Sc. 2nd Semester Non-Med (4-6) Days


Paper : Properties of Matter and Kinetic Theory of Gases (PH-201)

Teacher's Name : Dr. Raj Kumari

Month	Dates	Topic to be covered	Academic/ Activity to be organized	Assignments/ Tests
April	09	Introduction		
	14-16	Unit 1: Moment of inertia Rotation of rigid body, Moment of inertia, Torque, angular momentum, Kinetic Energy of rotation.		
	21-23	Theorem of perpendicular and parallel axes (with proof), Moment of inertia of solid sphere, Moment of inertia of hollow sphere		
	28-30	MOI of Spherical shell, solid cylinder, Hollow cylinder and solid bar of rectangular cross-section		Assignment I
May	5-7	Fly wheel, Moment of inertia of an irregular body, Acceleration of a body rolling down on an inclined plane		
	12-14	Unit 2: Elasticity Elasticity, Stress and Strain, Hook's law Elastic constant and their relations	Declamation Contest	
	19-21	Poisson's ratio, Torsion of cylinder and twisting couple, Torsion of cylinder and twisting couple contd..		
	26-28	Determination of coefficient of modulus of rigidity for the material of wire by Maxwell's needle, bending of beam (Bending moment and its magnitude), <i>Numerical Problems</i>		Assignment II
June	2-4	Cantilever and centrally loaded beam, Determination of Young's modulus for the material of the beam, Elastic constants for the material of the wire by Searle's method; <i>Discussion and Queries</i>		Test I
	9-11	Unit 3: Kinetic theory of gases-I Assumption of Kinetic theory of gases, Pressure of an ideal gas (with derivation),		
	16-18	Kinetic interpretation of Temperature, Ideal Gas equation, Degree of freedom, Law of equipartition of energy, Law of equipartition of energy, application for specific heat of gases,		
	23-25, 30	Real gases, Vander wall's equation, Brownian motion (Qualitative),		Test II

July	1-2	Unit 4: Kinetic theory of gases-II Introduction, Maxwell's distribution of speed and velocities	Seminar by students	
	7-9	Experimental verification of Maxwell's law of speed distribution: most probable speed		
	14-16	Average and r.m.s. speed; <i>Numerical Problems</i> , Mean free path		
	21-23	Transport of energy and momentum, Diffusion of gases		
	28-30	Queries and Discussion		Revision Test


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HOD
(Dr. Raj Kumar)

Principal

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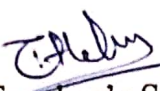
Class : B.Sc. 2nd Semester Non-Med (1-3) Days


Paper : Semi-Conductor Devices (PH-202)

Teacher's Name : Dr. Raj Kumari

Month	Dates	Topic to be covered	Academic/ Activity to be organized	Assignments/ Tests
April	11-13	Unit I: Semiconductors Energy bands in solids, Intrinsic and extrinsic semiconductors		
	18-20	carrier mobility and electrical resistivity of Semi- Conductor, Hall effect		
	25-27	p-n junction diode and their characteristics Zener and Avalanche breakdown, Zener diode, Zener diode as a voltage regulator		Assignment I
May	2-4	p-n junction as a rectifier, half wave and full wave rectifiers (with derivation) filters (series inductor, shunt capacitance, L-section or choke, π and R.C. filter circuits Doubts/Queries		
	9-11	Unit: II Transistors: Junction transistors Working of NPN and PNP transistors	Declamation Contest	
	16-18	Three configurations of transistor (C-B, C-E, C-C modes) Common base, common emitter characteristics of transistor, common collector characteristics of transistor		
	23-25	Constants of a transistor and their relation Advantages and disadvantages of C-E configuration,		Assignment II
	30-31	D.C. load line and numerical problems		
June	1, 6-8	Transistor biasing, various methods of transistor biasing and stabilization Doubts/Queries		Test I
	13-15	Unit III: Transistor Amplifiers: Amplifiers, Classification of amplifiers		
	20-22	common base and common emitter amplifiers coupling of amplifiers		
	27-29	various methods of coupling Resistance- Capacitance (RC) coupled amplifier (two stage, concept of band width, no derivation) Doubts/Queries		Test II
July	1, 4-6	Unit IV : Oscillators: Principle of oscillation, classification of oscillators,cont...	Seminar by students	

	11-13	Condition for self sustained oscillation: Barkhausen criterion for oscillation,		
	18-20	Tuned collector common emitter oscillator, Hartley oscillator, C.R.O. (Principle and Working).		
	25-27	Doubts/Querries		Revision Test


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Name of College: Govt. College for Women, Shahzadpur (Ambala)

Academic Session: April - July (2021-22)

Class: B.Sc 1st Year

Paper: Vector Calculus, BM-123

Teacher's Name: Natasha

Week	Dates	Topic to be covered	Academic/Activity to be organized	Assignments/Test
Week 1	08.04.2022-14.04.2022	Scalar and vector product of three vectors, product of four vectors. Reciprocal vectors. Vector differentiation Scalar Valued point functions,		
Week 2	15.04.2022-21.04.2022	vector valued point functions, derivative along a curve, directional derivatives		
Week 3	22.04.2022-28.04.2022	Gradient of a scalar point function, geometrical interpretation of grad F , character of gradient as a point function.		Test
Week 4	29.04.2022-05.05.2022	Divergence and curl of vector point function, characters of Div f and Curl f as point function, examples		
Week 5	06.05.2022-12.05.2022	Gradient, divergence and curl of sums and product and their related vector identities. Laplacian operator		Assignment
Week 6	13.05.2022-19.05.2022	Orthogonal curvilinear coordinates Conditions for orthogonality fundamental triad of mutually orthogonal unit vectors		
Week 7	20.05.2022-26.05.2022	Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates,		Test
Week 8	27.05.2022-02.06.2022	Cylindrical co-ordinates		
Week 9	03.06.2022-09.06.2022	Spherical coordinates	Seminar	Test
Week10	10.06.2022-16.06.2022	Vector integration; Line integral,		
Week11	17.06.2022-23.06.2022	Surface integral		
Week12	24.06.2022-30.06.2022	Volume integral		Test
Week13	31.06.2022-06.07.2022	Theorems of Gauss, Green		
Week14	07.07.2022-13.07.2022	Stokes and problems based on these theorems		
Week15	14.07.2022-18.07.2022	Revision		

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Name of College: Govt. College for Women, Shahzadpur (Ambala)

Academic Session: April –July (2021-22)

Class: B.Sc 1st Year

Paper: Ordinary Differential Equations BM-122

Teacher's Name: Natasha

Week	Dates	Topic to be covered	Academic/Activity to be organized	Assignments/Test
Week 1	08.04.2022-14.04.2022	Geometrical meaning of a differential equation. Exact differential equations, integrating factors.		
Week 2	15.04.2022-21.04.2022	First order higher degree equations solvable for x,y,p Lagrange's equations, Clairaut's equations..		Test
Week 3	22.04.2022-28.04.2022	Equation reducible to Clairaut's form. Singular solutions		
Week 4	29.04.2022-05.05.2022	Orthogonal trajectories: in Cartesian coordinates and polar coordinates. Self orthogonal family of curves..		Test
Week 5	06.05.2022-12.05.2022	Linear differential equations with constant coefficients.		
Week 6	13.05.2022-19.05.2022	Homogeneous linear ordinary differential equations, Equations reducible to homogeneous		
Week 7	20.05.2022-26.05.2022	Linear differential equations of second order: Reduction to normal form.		Test
Week 8	27.05.2022-02.06.2022	Transformation of the equation by changing the dependent variable/ the independent variable		
Week 9	03.06.2022-09.06.2022	Solution by operators of non-homogeneous linear differential equations Reduction of order of a differential equation.		Assignment
Week10	10.06.2022-16.06.2022	Method of variations of parameters. Method of undetermined coefficients.		
Week11	17.06.2022-23.06.2022	Ordinary simultaneous differential equations. Solution of simultaneous differential equations involving operators $x (d/dx)$ or $t (d/dt)$ etc.	Seminar	Test
Week12	24.06.2022-30.06.2022	Simultaneous equation of the form $dx/P = dy/Q = dz/R$. Total differential equations.		
Week13	31.06.2022-06.07.2022	Condition for $Pdx + Qdy + Rdz = 0$ to be exact. General method of solving $Pdx + Qdy + Rdz = 0$ by taking one variable constant. Method of auxiliary equations.		
Week14	07.07.2022-13.07.2022	Condition for $Pdx + Qdy + Rdz = 0$ to be exact. General method of solving $Pdx + Qdy + Rdz = 0$ by taking one variable constant. Method of auxiliary equations.		Test
Week15	14.07.2022-18.07.2022	Revision		

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