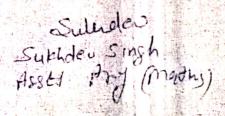
Name Sulchder Singh CLASS: B.Sc./B.A. - I Year II Sem

NAME OF PAPER - VECTOR CALCULUS AND GEOMETRY

PAPER CODE(for B.Sc.) - CML-207 PAPER CODE(for B.A.) - BAMH-105

SR. NO.	MONTHS	PERIOD	TOPICS
1.	1st	1 ^{rt} week 2 nd week 3 rd week Last week	1. Scalar and vector product of three vectors, derivative along a curve, directional derivatives. 2. Gradient of a scalar point function. Geometrical interpretation of grad \$\phi\$. 3. Divergence and curl of a vector point function. Gradient, divergence and curl of sums and product and their related vector identities.
2.	2nd	1" week 2 nd week 3 rd week Last week	4. Laplacian operators. 1. Line integral, surface integral, volume integral 2. Gauss divergence theorem, Divergence theorem in Cartesian coordinates 3. Green theorem, Stoke's theorem (relation between line and surface integral) Stoke's theorem in Cartesian form. 4. Green's Theorem in plane as special case of Stoke's Theorem
3.	3rd	1 st week 2 nd week 3 rd week Last week	1.General equation of second degree, 2 Tracing of conics. System of conics 3 Tangent at any point to the conic, Director circle of conic, 4.tangent and normal to the conic.
4.	4th	1 st week	Sphere; plane section of a sphere. Sphere through a given circle.
		2 nd week	2. Intersection of two spheres. Co-axial system of spheres.
		3 rd week	3. Cones: Right circular cone, enveloping cone and reciprocal cone.
		Last week	4.Cylinder: Right circular cylinder and enveloping cylinder



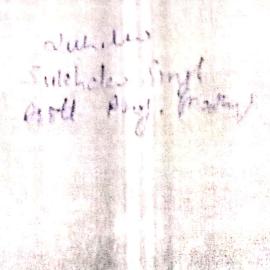
Scalion - 2023 -24

Name - Sukholee Singh

CLASS: B.Sc./B.A. -1 Year II Sem

NAME OF PAPER - Ordinary Diff. Eqn. & Laplace Transform PAPER CODE(for B.Sc) - CML-206 PAPER CODE(for B.A.) - BAMH-104

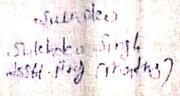
SR.	MONTHS	PERIOD	TOPICS
1.	1st	1" week	Geometrical meaning of a differential equation. Exact differential equations, integrating factors.
		2nd week	2. First order higher degree equations tolyable for
		3rd week	x.y.p Lagrange's equations, 3 Clairaut's equations. Equation reducible to Clairaut's form.
100000000000000000000000000000000000000		Last week	4. Singular solutions.
2.	2nd	1" week	1Orthogonal trajectories: in Cartesian coordinates
		2 nd week	and polar coordinates. 2 Self orthogonal family of curves. Linear
		3 rd week	differential equations with constant coefficients, 3 Homogeneous linear ordinary differential equations.
	Control of the Labor Control o	Last week	4 Equations reducible to homogeneous
3.	3rd	1 st week	1. Linear differential equations of second order:
		2nd week	2. Reduction to normal form.
		3 rd week	 Transformation of the equation by changing the dependent variable/ the independent variable.
		Last week	4. Method of variations of parameters
4.	4th	1st week	 Laplace Transforms - Existence theorem for Laplace transforms, Linear property of the Laplace
	N 100 100 100 100 100 100 100 100 100 10		transforms, Shifting theorems,
		2nd week	2.Laplace transforms of derivatives and integrals,
		3rd week	3. Inverse Laplace transforms, convolution theorem,
		Last week	4.solution of ordinary differential equations using Laplace transform.



CLASS: B.Sc./B.A. - 11 Year IV Sem

NAME OF PAPER - Partial Differential Equations & Special Functions PAPER CODE(for B.Sc) - CML-406 PAPER CODE(for B.A.) - BAMH-204

SR.	MONTHS	PERIOD	TOPICS
NO.			
1.	1st	1st week	1.Partial differential equations: Formation, order and degree.
		2 nd week	2.Linear and non-linear partial differential equations of the first order; Complete solution.
		3rd week	J.Singular solution, General solution, Solution of
	sury B	Last week	4.Charpit's general method of solution, Compatible systems of first order equations, Jacobi's method.
2.	2nd	1 st week	Linear partial differential equations of second and higher orders, Linear and non-linear homogeneous and nonhomogeneous equations with constant coefficients,
		2 nd week	2. Partial differential equation with variable coefficients reducible to equations with constant coefficients, their complimentary functions and particular integrals,
		3rd week	3. Equations reducible to linear equations with constant coefficients. 4. Method of separation of variables: Solution of
		Last week	Laplace's equation, Wave equation (one and two dimensions), Diffusion (Heat) equation (one and two dimension) in Cartesian Co-ordinate system
3.	3rd	1 st week	1. Classification of linear partial differential equations of second order, hyperbolic, parabolic and elliptic types,
		2 nd week	2. Reduction of second order linear partial differential equations to Canonical (Normal) forms and their solutions.
		3 rd week	3. Solution of linear hyperbolic equations, Monge's method for partial differential equations of second order, Cauchy's problem for second order partial differential equations, 4. Characteristic equations and characteristic
		Last week	curves of second order partial differential equation.
4.	4th	1ª week	1. Series solution of differential equations - Power series method.
		2 nd week	2. Bessel equation and its solution: Besselfunctions and their properties-Convergence, recurrence, Relations and generating functions, Orthogonality of
			Bessel functions. 3 Legendre differential equation and its solution:
		3 rd week	Legendre function and its properties.
		Last week	4. Orthogonality of Legendre polynomial Rodrigues' Formula forLegendre Polynomial



Session - 2023-24 Name - Sukholeu Siryh

CLASS: B.Sc./B.A. - III Year VI Sem NAME OF PAPER - REAL AND COMPLEX ANALYSIS PAPER CODE(for B.Sc) - CML-607(i) PAPER CODE(for B.A.) - BAMH-306(i)

SR. NO	MONTHS	PERIOD	TOPICS
	Ist	1 st week 2 ^{sd} week 3 ^{sd} week Last week	1Definition and examples of metric spaces, neighborhoods, 2. Limit points, interior points, open and closed sets, closure and interior, boundary points, 3. Subspace of a metric space, equivalent metrics, 4. Cauchy sequences, completeness, Cantor's intersection theorem.
2.	2nd	1 ⁿ week 2 nd week 3 nd week Last week	1. Baire's category theorem, Contraction Principle, 2. Continuous functions, uniform continuity compactness for metric spaces, 3. Sequential Compactness Bolzano Weierstrass Property, 4. Totalboundedness, finite intersection property continuity in relation with compactness connectedness.
3.	3rd	1st week 2st week 3rd week Last week	Ilmproper integrals and their convergence comparison tests, 2. Abel's and Dirichlet's tests 3. Frullani's integral, 4. Integral as a function of a parameter, Continuity differentiability and integrability of an integral of a function of a parameter.
		2 nd week 2 nd week 3 rd week Last week	Topology of complex numbers: Trigonometric exponential, logarithmic and hyperbolic trigonometric functions. Extended complex plane, Stereographic projection of complex numbers Continuity and differentiability of complex functions. Analytic functions, Cauchy-Riemann equations, harmonic conjugates, harmonic functions 4. Construction of analytic functions direct method and Milne-Thomson method.

