

Govt. College, Sampla
LESSON PLAN
JULY 2023 to NOVEMBER 2023

Name of the Assistant Professor: Mr. Ashok Kumar
Class: B.A. I (Sem-1)
Subject: Mathematics
Paper: Algebra

Week	Description
1 st (24.07.2023 to 29.07.2023)	Introduction of Symmetric, Skew-symmetric matrices.
2 nd (31.07.2023 to 05.08.2023)	Hermitian and skew Hermitian matrices. Elementary Operations on matrices. Rank of a matrices. Inverse of a matrix and group discussion.
3 rd (07.08.2023 to 12.08.2023)	Linear dependence and independence of rows and columns of matrices. Row rank and column rank of a matrix. Eigen values and basic Examples.
4 th (14.08.2023 to 19.08.2023)	Eigenvectors and the characteristic equation of a matrix. Minimal polynomial of a matrix.
5 th (21.08.2023 to 26.08.2023)	Cayley Hamilton theorem and its use in finding the inverse of a matrix. Assignment and test of unit I
6 th (28.08.2023 to 02.09.2023)	Applications of matrices to a system of linear equations and examples.
7 th (04.09.2023 to 09.09.2023)	Theorems on consistency of a system of linear equations.
8 th (11.09.2023 to 16.09.2023)	Unitary and Orthogonal Matrices, Group discussion
9 th (18.09.2023 to 23.09.2023)	Bilinear and Quadratic forms. Assignment and test of unit II.
10 th (25.09.2023 to 30.09.2023)	Relations between the roots and coefficients of general polynomial equation in one variable.
11 th (02.10.2023 to 07.10.2023)	Solutions of polynomial equations having conditions on roots.
12 th (09.10.2023 to 14.10.2023)	Common roots and multiple roots.
13 th (16.10.2023 to 21.10.2023)	Transformation of equations. Assignments, group discussion and test of Unit III
14 th (23.10.2023 to 28.10.2023)	Nature of the roots of an equation Descarte's rule of signs.
15 th (30.10.2023 to 04.11.2023)	Solutions of cubic equations (Cardon's method).
16 th (06.11.2023 to 11.11.2023)	Biquadratic equations and their solutions. Assignments, group discussion and test of Unit IV
17 th (13.11.2023 to 18.11.2023)	Revision
18 th (20.11.2023 to 25.11.2023)	Revision



Govt. College, Sampla
LESSON PLAN
JULY 2023 to NOVEMBER 2023

Name of the Assistant Professor: Mr. Ashok Kumar
Class : B.A. II (Sem-3)
Subject: Mathematics
Paper: PDE

Week	Description
1 st (24.07.2023 to 29.07.2023)	Introduction to Curriculum, Partial differential equations: Formation, order and degree, Example of formation of Partial differential equations.
2 nd (31.07.2023 to 05.08.2023)	Linear and Non-Linear Partial differential equations of the first order and related problems.
3 rd (07.08.2023 to 12.08.2023)	Classification of the solutions of Partial differential equations, Complete solution, singular solution, General solution, Example to find the solutions of Partial differential equations in various form.
4 th (14.08.2023 to 19.08.2023)	Some standard forms of Partial differential equations and its solutions, Jacobi's method and related examples.
5 th (21.08.2023 to 26.08.2023)	Linear homogeneous partial differential equations of second and higher orders with constant coefficients.
6 th (28.08.2023 to 02.09.2023)	Non-homogeneous equations with constant coefficients.
7 th (04.09.2023 to 09.09.2023)	Method to find the complimentary functions and particular Integrals of Partial differential equation with variable coefficients. Equations reducible to linear equations with constant co-efficient.
8 th (11.09.2023 to 16.09.2023)	Parabolic and elliptic type's partial differential equations. Reduction of parabolic equations to its canonical forms, Reduction of elliptic equations to its canonical forms.
9 th (18.09.2023 to 23.09.2023)	Solution of general hyperbolic PDE of second order by Riemann's Method.
10 th (25.09.2023 to 30.09.2023)	Monge's method for partial differential equations of second order,
11 th (02.10.2023 to 07.10.2023)	Monge's method of Solving $Rr+Ss+Tt+U(rt-s^2)=V$
12 th (09.10.2023 to 14.10.2023)	Cauchy's problem for second orders partial differential equations and finds its examples and applications.
13 th (16.10.2023 to 21.10.2023)	Characteristic equations and characteristic curves of second order partial differential equation
14 th (23.10.2023 to 28.10.2023)	Method of separation of variables: Solution of Laplace's equation and solve its exercise.
15 th (30.10.2023 to 04.11.2023)	Wave equation, Method of Separation of variable: Solution of Wave Equation and solve its exercise.
16 th (06.11.2023 to 11.11.2023)	Heat equation, Method of Separation of variable: Solution of Heat Equation and solve its exercise.
17 th (13.11.2023 to 18.11.2023)	Revision
18 th (20.11.2023 to 25.11.2023)	Revision

Govt. College, Sampla
LESSON PLAN
JULY 2023 to NOVEMBER 2023

Name of the Assistant Professor: Mr. Ashok Kumar
Class : B.A. III (Sem-5)
Subject: Mathematics
Paper: Numerical Analysis

Week	Description
1 st (24.07.2023 to 29.07.2023)	Introduction to Curriculum, Finite Differences operators and their relations.
2 nd (31.07.2023 to 05.08.2023)	Finding the missing terms and effect of error in a difference tabular values, Interpolation with equal intervals.
3 rd (07.08.2023 to 12.08.2023)	Newton's forward and Newton's backward interpolation formulae, Interpolation with unequal intervals.
4 th (14.08.2023 to 19.08.2023)	Newton's divided difference, Lagrange's Interpolation formulae, Hermite Formula.
5 th (21.08.2023 to 26.08.2023)	Central Differences: Gauss forward and Gauss's backward interpolation formulae, Sterling, Bessel Formula.
6 th (28.08.2023 to 02.09.2023)	Probability distribution of random variables, Binomial distribution.
7 th (04.09.2023 to 09.09.2023)	Probability distribution of random variables, Binomial distribution.
8 th (11.09.2023 to 16.09.2023)	Numerical Differentiation: Derivative of a function using interpolation Formulae.
9 th (18.09.2023 to 23.09.2023)	Eigen Value Problems: Power method, Jacobi's method.
10 th (25.09.2023 to 30.09.2023)	Given's method, House Holder's method, QR method, Lanczos method.
11 th (02.10.2023 to 07.10.2023)	Numerical Integration: Newton-Cote's Quadrature formula, Trapezoidal Rule.
12 th (09.10.2023 to 14.10.2023)	Simpson's one- third and three-eighth rule, Chebychev formula, Gauss Quadrature formula.
13 th (16.10.2023 to 21.10.2023)	Numerical solution of ordinary differential equations: Single step methods Picard's method. Taylor's series method.
14 th (23.10.2023 to 28.10.2023)	Euler's method, Runge-Kutta Methods.
15 th (30.10.2023 to 04.11.2023)	Multiple step methods; Predictor-corrector method, Modified Euler's method, Milne-Simpson's method.
16 th (06.11.2023 to 11.11.2023)	Revision
17 th (13.11.2023 to 18.11.2023)	Revision
18 th (20.11.2023 to 25.11.2023)	Revision



Govt. College, Sampla
LESSON PLAN
JULY 2023 to NOVEMBER 2023

Name of the Assistant Professor: Mr. Ashok Kumar
Class: B.Com. I
Subject: Mathematics
Paper: Business Mathematics

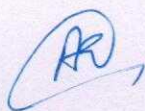
Week	Description
1 st (24.07.2023 to 29.07.2023)	Introduction to Curriculum, Definition of sets and its brief introduction with examples.
2 nd (31.07.2023 to 05.08.2023)	Elements, types, presentation and equality of Sets, Union, Intersection of sets, related examples and questions.
3 rd (07.08.2023 to 12.08.2023)	Complement and Difference of Sets, Venn Diagram, Cartesian Product of two Sets, Applications of Set Theory.
4 th (14.08.2023 to 19.08.2023)	Definition and basic properties of indices, Exponent, Solved and unsolved question of indices.
5 th (21.08.2023 to 26.08.2023)	Introduction and some important deductions, examples and related questions.
6 th (28.08.2023 to 02.09.2023)	Product, quotient, power and base change formula of logarithms, Two systems of logarithms, Characteristic and mantissa, anti-logarithms, miscellaneous exercise.
7 th (04.09.2023 to 09.09.2023)	Introduction to permutations and combinations, factorial notation, fundamental principal of counting.
8 th (11.09.2023 to 16.09.2023)	Difference between permutations and combinations, permutations with different types of groups.
9 th (18.09.2023 to 23.09.2023)	Some theorems on combinations, practical problems on combinations.
10 th (25.09.2023 to 30.09.2023)	Introduction of sequences and series, Arithmetic progression (A.P.).
11 th (02.10.2023 to 07.10.2023)	Arithmetic mean, Geometric Progression (G.P.), application of A.P. and G.P.
12 th (09.10.2023 to 14.10.2023)	Introduction of data, collection, editing and classification of data.
13 th (16.10.2023 to 21.10.2023)	Methods of classification, types of continuous series, Data interpretation.
14 th (23.10.2023 to 28.10.2023)	Tabulation, parts of a statistical table, types of tables, Bar graphs, line graphs and based questions.
15 th (30.10.2023 to 04.11.2023)	Pie charts, examples based on pie charts.
16 th (06.11.2023 to 11.11.2023)	Revision
17 th (13.11.2023 to 18.11.2023)	Revision
18 th (20.11.2023 to 25.11.2023)	Revision



Govt. College, Sampla
LESSON PLAN
JULY 2023 to NOVEMBER 2023

Name of the Assistant Professor: Mr. Ashok Kumar
Class : B.A. II (Sem-3)
Subject: Mathematics
Paper: Statics

Week	Description
1 st (24.07.2023 to 29.07.2023)	Introduction to curriculum, Forces acting at a point, Parallelogram Law of forces, Resolution of a given force.
2 nd (31.07.2023 to 05.08.2023)	Triangle Law of forces, $\lambda - \mu$ Theorem, Lami's Theorem, Polygon Law of Forces
3 rd (07.08.2023 to 12.08.2023)	Concurrent Forces and related problems, Test
4 th (14.08.2023 to 19.08.2023)	Parallel Forces: Concept, Examples and Exercises
5 th (21.08.2023 to 26.08.2023)	Moments: Concept, Examples and Exercises
6 th (28.08.2023 to 02.09.2023)	Couples: Concept, Examples and Exercises
7 th (04.09.2023 to 09.09.2023)	Analytical Conditions of Equilibrium of Coplanar Forces: Concept, Examples and Exercises
8 th (11.09.2023 to 16.09.2023)	Friction: Concept, Examples and Exercises
9 th (18.09.2023 to 23.09.2023)	Centre of Gravity: Concept, Examples and Exercises
10 th (25.09.2023 to 30.09.2023)	Virtual Work: Concept, Examples and Exercises
11 th (02.10.2023 to 07.10.2023)	Forces in Three Dimensions: Concept, Examples and Exercises
12 th (09.10.2023 to 14.10.2023)	Wrenches: Concept, Examples and Exercises
13 th (16.10.2023 to 21.10.2023)	Null Lines and Null Planes: Concept, Examples and Exercises
14 th (23.10.2023 to 28.10.2023)	Moments: Concept, Examples and Exercises
15 th (30.10.2023 to 04.11.2023)	Stable, Unstable and Neutral Equilibrium: Concept, Examples and Exercise.
16 th (06.11.2023 to 11.11.2023)	Short Answer Type Questions
17 th (13.11.2023 to 18.11.2023)	Revision
18 th (20.11.2023 to 25.11.2023)	Revision



WEEKLY LESSON PLAN
JULY 2023 to NOVEMBER 2023

Name of the Assistant Professor: Dr. Asha
Class: B.A. I
Subject: Mathematics
Paper: Solid Geometry

Week	Description
1 st (24.07.2023 to 29.07.2023)	Introduction to Curriculum, Conic sections, General Equation of second degree as a conic section, Centre of a conic section, Asymptotes of the conic.
2 nd (31.07.2023 to 05.08.2023)	Lengths, foci, eccentricity and directrices of the conic, Parabola, General Conic and related problems, tracing of conics.
3 rd (07.08.2023 to 12.08.2023)	Tangent at any point to the conic, Chord of contact, pole of line to the conic, Director circle of conic, System of conics.
4 th (14.08.2023 to 19.08.2023)	Confocal conics and related problems, Polar equation of a conic, tangent and normal to the conic, Assignment and test of Unit-I.
5 th (21.08.2023 to 26.08.2023)	Definition of spheres and its brief introduction, Equation of sphere, Condition of touching of two spheres, Four point form of sphere.
6 th (28.08.2023 to 02.09.2023)	Plane section of a sphere and related problems, Sphere through a given circle, Intersection of a straight line and a sphere.
7 th (04.09.2023 to 09.09.2023)	Equation of the tangent plane, Condition of tangency of a line and a sphere, Plane of Contact, Polar plane, Pole of a given plane.
8 th (11.09.2023 to 16.09.2023)	Angle of intersection of two spheres, Orthogonal spheres, Radical plane of two spheres, Co-axial system of spheres.
9 th (18.09.2023 to 23.09.2023)	Right circular cone, Enveloping cone and Reciprocal cone.
10 th (25.09.2023 to 30.09.2023)	Right circular cylinder and enveloping cylinder, revision and test of Unit-III.
11 th (02.10.2023 to 07.10.2023)	Central Conicoids, Equation of tangent plane, Director sphere, Normal to the conicoids, Polar plane of a point.
12 th (09.10.2023 to 14.10.2023)	Enveloping cone of a coinoid, Enveloping cylinder of a coinoid.
13 th (16.10.2023 to 21.10.2023)	Plane Sections of Conicoid and related problems.
14 th (23.10.2023 to 28.10.2023)	Generating Lines of Hyperboloid, Hyperbolic Paraboloid, Confocal conicoid.
15 th (30.10.2023 to 04.11.2023)	Reduction of second degree equation and related problems.
16 th (06.11.2023 to 11.11.2023)	Revision
17 th (13.11.2023 to 18.11.2023)	Revision
18 th (20.11.2023 to 25.11.2023)	Revision

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WEEKLY LESSON PLAN
JULY 2023 to NOVEMBER 2023

Name of the Assistant Professor: Dr. Asha
Class : B.A. II
Subject: Mathematics
Paper: Advanced Calculus

Week	Description
1 st (24.07.2023 to 29.07.2023)	Introduction to Curriculum, Definition of continuous function and its brief introduction, Continuity, Sequential Continuity and properties, Theorem on continuity.
2 nd (31.07.2023 to 05.08.2023)	Uniform continuity and theorems of uniform continuity, The Derivative and Mean Value theorems, Derivative, Rolle's Theorem.
3 rd (07.08.2023 to 12.08.2023)	Lagrange's mean value theorem, Taylor's Theorem with various forms of remainders and examples.
4 th (14.08.2023 to 19.08.2023)	Indeterminate forms of different types and related questions.
5 th (21.08.2023 to 26.08.2023)	Limit and continuity of real valued functions of two variables, Partial differentiation, Implicit functions.
6 th (28.08.2023 to 02.09.2023)	Change of variables, Homogenous Function, Euler's theorem on homogeneous functions, Taylor's theorem for functions of two variables.
7 th (04.09.2023 to 09.09.2023)	Differentiability of real valued functions of two variables, Schwarz and Young's theorem, Implicit function theorem.
8 th (11.09.2023 to 16.09.2023)	Maxima, Minima and saddle points of two variables, Lagrange's method of multipliers.
9 th (18.09.2023 to 23.09.2023)	Curve in space, Tangent to a curve, Equation of a tangent line.
10 th (25.09.2023 to 30.09.2023)	Osculating plane, Analytic function, Order of contact, Equation of a tangent plane.
11 th (02.10.2023 to 07.10.2023)	Normal line at a point, Principal Normal and Bi-normal, Fundamental unit vectors and planes, Curvature.
12 th (09.10.2023 to 14.10.2023)	Circle of Curvature, Radius and centre of circle of curvature, Properties of the locus of the centre of curvature.
13 th (16.10.2023 to 21.10.2023)	Sphere of Curvature, Radius and centre of sphere of curvature, Properties of spherical curvature.
14 th (23.10.2023 to 28.10.2023)	Introduction of Involutives, Evolutes, Curvature and torsion of Involutives and Evolutes.
15 th (30.10.2023 to 04.11.2023)	Surface, Transformation of parameter, Parametric curves, Normal line and examples.
16 th (06.11.2023 to 11.11.2023)	Revision
17 th (13.11.2023 to 18.11.2023)	Revision
18 th (20.11.2023 to 25.11.2023)	Revision

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WEEKLY LESSON PLAN
JULY 2023 to NOVEMBER 2023

Name of the Assistant Professor: Dr. Asha
Class : B.A. III
Subject: Mathematics
Paper: Real Analysis

Week	Description
1 st (24.07.2023 to 29.07.2023)	Introduction to Curriculum, Introduction of Riemann integral and related theorems and examples, Darboux's theorem.
2 nd (31.07.2023 to 05.08.2023)	Integrability of continuous functions, Monotonic functions, Integrability of continuous and monotone functions and related theorems.
3 rd (07.08.2023 to 12.08.2023)	The Fundamental theorem of integral calculus and basic examples, Mean value theorems of integral calculus. Assignment and test of Unit-II.
4 th (14.08.2023 to 19.08.2023)	Improper integral and their convergence, Comparison tests.
5 th (21.08.2023 to 26.08.2023)	Cauchy's Test, Abel's Test and Dirichlet's Test for convergence, Frullani's Integral.
6 th (28.08.2023 to 02.09.2023)	Integral as a function of a parameter, revision and test of Unit-II.
7 th (04.09.2023 to 09.09.2023)	Definition and examples of metric spaces.
8 th (11.09.2023 to 16.09.2023)	Neighbourhood of a point, Interior Point, Open Set and related theorems and examples.
9 th (18.09.2023 to 23.09.2023)	Limit Point, Closure of a set, Closed set and related theorems, Equivalent Metrics.
10 th (25.09.2023 to 30.09.2023)	Cauchy Sequences, Complete Metric Space, Subsequence and related theorems, Cantor's Intersection Theorem.
11 th (02.10.2023 to 07.10.2023)	Baire's category theorem, contraction Principle, revision and test of Unit-III.
12 th (09.10.2023 to 14.10.2023)	Continuity and uniform continuity in metric space and related theorems.
13 th (16.10.2023 to 21.10.2023)	Compactness in metric spaces, Sequential compactness, Bolzano-Weierstrass property, Finite Intersection Property.
14 th (23.10.2023 to 28.10.2023)	Continuity in relation with compactness and related theorems.
15 th (30.10.2023 to 04.11.2023)	Compactness in metric space, revision and test of Unit-IV.
16 th (06.11.2023 to 11.11.2023)	Revision
17 th (13.11.2023 to 18.11.2023)	Revision
18 th (20.11.2023 to 25.11.2023)	Revision

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WEEKLY LESSON PLAN
JULY 2023 to NOVEMBER 2023

Name of the Assistant Professor: Dr. Asha
Class : B.A. III
Subject: Mathematics
Paper: Groups and Rings

Week	Description
1 st (24.07.2023 to 29.07.2023)	Introduction to Curriculum, Definition of a group with example and simple properties of groups.
2 nd (31.07.2023 to 05.08.2023)	Subgroups and Subgroup criteria and related theorems.
3 rd (07.08.2023 to 12.08.2023)	Generation of groups, cyclic groups and related theorems
4 th (14.08.2023 to 19.08.2023)	Cosets, Left and right cosets, Index of a sub-group, Coset decomposition, Lagrange's theorem and its consequences.
5 th (21.08.2023 to 26.08.2023)	Normal subgroups, Quotient groups and related theorems, revision and test of Unit-I.
6 th (28.08.2023 to 02.09.2023)	Homomorphisms, Isomorphisms, Automorphisms and inner automorphisms of a group.
7 th (04.09.2023 to 09.09.2023)	Automorphisms of cyclic groups, Permutations groups, Even and odd permutations, Alternating groups.
8 th (11.09.2023 to 16.09.2023)	Cayley's theorem, Center of a group and derived group of a group and test of Unit-II, Assignment.
9 th (18.09.2023 to 23.09.2023)	Introduction to rings and subrings and related examples and theorems.
10 th (25.09.2023 to 30.09.2023)	Integral domains and fields, Characteristics of a ring.
11 th (02.10.2023 to 07.10.2023)	Ring Homomorphisms, Ideals (principle, prime and Maximal).
12 th (09.10.2023 to 14.10.2023)	Quotient rings, Field of quotients of an integral domain and test of Unit-III.
13 th (16.10.2023 to 21.10.2023)	Euclidean rings, Polynomial rings, Polynomials over the rational field.
14 th (23.10.2023 to 28.10.2023)	The Eisenstein's criterion, Polynomial rings over commutative rings.
15 th (30.10.2023 to 04.11.2023)	Unique factorization domain, R unique factorization domain implies so is $R[X_1, X_2, \dots, X_n]$ and test of Unit-IV.
16 th (06.11.2023 to 11.11.2023)	Revision
17 th (13.11.2023 to 18.11.2023)	Revision
18 th (20.11.2023 to 25.11.2023)	Revision

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GOVT.COLLEGE, SAMPLA
LESSON PLAN
JANUARY 2024 to APRIL 2024

Name of the Assistant Professor: Dr. Asha
Class: B.A. I (Sem-2)
Subject: Mathematics
Paper: Vector Calculus

Week	Description
1 st (01.01.2024 to 06.01.2024)	Introduction to Curriculum, Basic concepts related to vectors.
2 nd (08.01.2024 to 13.01.2024)	Scalar Triple Products, Vector Triple Product, Scalar and Vector Product of Four Vectors.
3 rd (15.01.2024 to 20.01.2024)	Reciprocal System of Vectors, Limit, Continuity and Derivative of Vector Function and related theorems, Curves in Space, Velocity, Acceleration, Test
4 th (22.01.2024 to 27.01.2024)	Partial Derivatives of a vector functions, Gradient of a scalar field, Level Surfaces and related concepts.
5 th (29.01.2024 to 03.02.2024)	Divergence of a vector function, Curl of a vector function, Second orders Differential Equations and Laplacian operator and related examples.
6 th (05.02.2024 to 10.02.2024)	Curvilinear Coordinates –Introduction, Orthogonal Curvilinear Coordinates, Arc Length, Volume Element and Area Element.
7 th (12.02.2024 to 17.02.2024)	Gradient, Divergence and Curl in Terms of Curvilinear Coordinates, Cylindrical Coordinates with Examples,
8 th (19.02.2024 to 24.02.2024)	Spherical Coordinates: Concept, properties with problem discussion, Test.
9 th (26.02.2024 to 02.03.2024)	Vector Integration – Concept and results, Concept of Line Integrals and related examples
10 th (04.03.2024 to 09.03.2024)	Surface integrals and related examples
11 th (11.03.2024 to 16.03.2024)	Volume Integrals: concept with problems, Test
12 th (18.03.2024 to 23.03.2024)	Gauss's Divergence Theorem and related results, problems
13 th (01.04.2024 to 06.04.2024)	Green's Theorem and Stoke's Theorem, Stoke's Theorem in Cartesian form
14 th (08.04.2024 to 13.05.2024)	Short Answer Type Questions
15 th (15.04.2024 to 20.04.2024)	Revision
16 th (22.04.2024 to 30.04.2024)	Revision

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GOVT.COLLEGE, SAMPLA
LESSON PLAN
JANUARY 2024 to APRIL 2024

Name of the Assistant Professor: Dr. Asha
Class: B.A. I (Sem-2)
Subject: Mathematics
Paper: Ordinary Differential Equations

Week	Description
1 st (01.01.2024 to 06.01.2024)	Introduction to Curriculum, Definition of differential equation, order and degree of differential equation, formation of differential equation.
2 nd (08.01.2024 to 13.01.2024)	Exact differential equations and integrating factors and related problems.
3 rd (15.01.2024 to 20.01.2024)	First order higher degree equations solvable for x,y,p and related problems.
4 th (22.01.2024 to 27.01.2024)	Lagrange's equations, Clairaut's equations, Singular solutions.
5 th (29.01.2024 to 03.02.2024)	Orthogonal trajectories in Cartesian coordinates and polar coordinates, Test
6 th (05.02.2024 to 10.02.2024)	Linear differential equations with constant co-efficient and its solution
7 th (12.02.2024 to 17.02.2024)	Linear differential equations with constant co-efficient and its solution-Continue
8 th (19.02.2024 to 24.02.2024)	Homogeneous Linear Equations, Equations reducible to homogeneous linear form
9 th (26.02.2024 to 02.03.2024)	Linear Differential Equations of second order and its solution
10 th (04.03.2024 to 09.03.2024)	Linear Differential Equations of second order : Method of variations of parameters, Method of undetermined coefficients
11 th (11.03.2024 to 16.03.2024)	Ordinary simultaneous differential equations
12 th (18.03.2024 to 23.03.2024)	Total Differential Equations
13 th (01.04.2024 to 06.04.2024)	Method of auxiliary equations, Test
14 th (08.04.2024 to 13.05.2024)	Short Answer Type Questions
15 th (15.04.2024 to 20.04.2024)	Revision
16 th (22.04.2024 to 30.04.2024)	Revision

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GOVT.COLLEGE, SAMPLA
LESSON PLAN
JANUARY 2024 to APRIL 2024

Name of the Assistant Professor: Dr. Asha
Class : B.A. II (Sem-4)
Subject: Mathematics
Paper: Sequence and Series

Week	Description
1 st (01.01.2024 to 06.01.2024)	Introduction to Curriculum, Boundedness of the set of real numbers, least upper bound, greatest lower bound of a set.
2 nd (08.01.2024 to 13.01.2024)	Neighbourhoods, interior points, isolated points, limit points, open sets, closed set.
3 rd (15.01.2024 to 20.01.2024)	Interior of a set, closure of a set in real numbers and their properties. Bolzano-Weierstrass theorem.
4 th (22.01.2024 to 27.01.2024)	Open covers, Compact sets, Heine-Borel Theorem and related examples, Test.
5 th (29.01.2024 to 03.02.2024)	Real Sequences and their convergence, Theorem on limits of sequence.
6 th (05.02.2024 to 10.02.2024)	Bounded and monotonic sequences, Cauchy's sequence, Cauchy general principle of convergence, Subsequences
7 th (12.02.2024 to 17.02.2024)	Convergence and divergence of Infinite Series, Comparison Tests of positive terms infinite series, Cauchy's general principle of Convergence.
8 th (19.02.2024 to 24.02.2024)	Convergence and divergence of geometric series, Hyper Harmonic series. Group Discussion and Test of Unit II.
9 th (26.02.2024 to 02.03.2024)	D-Alembert's ratio test, Raabe's test, Logarithmic test and Related Example.
10 th (04.03.2024 to 09.03.2024)	De Morgan and Bertrand's test, Cauchy's Nth root test, Gauss Test, Cauchy's integral test.
11 th (11.03.2024 to 16.03.2024)	Cauchy's condensation test, Alternating series, Leibnitz's test. Group Discussion and Test of Unit-3.
12 th (18.03.2024 to 23.03.2024)	Absolute and conditional convergence, Abel's lemma, Abel's test, Dirichlet's test, Insertion and removal of parenthesis.
13 th (01.04.2024 to 06.04.2024)	Rearrangement of terms in a series, Dirichlet's theorem, Riemann's Pringsheim's theorem, Cauchy product of series.
14 th (08.04.2024 to 13.05.2024)	Multiplication of series, Convergence and absolute convergence of infinite products. Group Discussion and Test of Unit- 4.
15 th (15.04.2024 to 20.04.2024)	Revision
16 th (22.04.2024 to 30.04.2024)	Revision

Asha

GOVT.COLLEGE, SAMPLA
LESSON PLAN
JANUARY 2024 to APRIL 2024

Name of the Assistant Professor: Dr Asha
Class : B.A.III (Sem-6)
Subject: Mathematics
Paper: Real and Complex Analysis

Week	Description
1 st (01.01.2024 to 06.01.2024)	Introduction to Curriculum, Jacobians-concept and numerical problems, Functional Dependence
2 nd (08.01.2024 to 13.01.2024)	Beta and Gamma Functions, Relationship between Beta and Gamma function and their properties.
3 rd (15.01.2024 to 20.01.2024)	Double and Triple integrals, Dirichlets integrals, Change of order of integration in double integrals, Test
4 th (22.01.2024 to 27.01.2024)	Fourier's series: Fourier expansion of piecewise monotonic functions.
5 th (29.01.2024 to 03.02.2024)	Properties of Fourier Coefficients, Dirichlet's conditions, Parseval's identity for Fourier series.
6 th (05.02.2024 to 10.02.2024)	Fourier series for even and odd functions, Half range series, Change of Intervals, Test
7 th (12.02.2024 to 17.02.2024)	Extended Complex Plane, Stereographic projection of complex numbers.
8 th (19.02.2024 to 24.02.2024)	Limit, continuity, uniform continuity of complex functions, Differentiability of complex functions.
9 th (26.02.2024 to 02.03.2024)	Analytic functions, Cauchy-Riemann Equations, Cauchy-Riemann equations in Polar form.
10 th (04.03.2024 to 09.03.2024)	Orthogonal System, Harmonic functions, Construction of Analytic functions by Milne-Thompson's Method and Exact Differential Method, Test
11 th (11.03.2024 to 16.03.2024)	Multi-valued Functions, Exponential function, Trigonometry functions, Hyperbolic function, Logarithmic functions, Inverse trigonometric and hyperbolic functions.
12 th (18.03.2024 to 23.03.2024)	Mappings by Elementary functions: Translation, rotation, Magnification and Inversion, Test
13 th (01.04.2024 to 06.04.2024)	Conformal Mappings, Linear Transformation, Mobius transformations
14 th (08.04.2024 to 13.05.2024)	Fixed pints, Cross ratio and Inverse Points, Critical Mappings Test
15 th (15.04.2024 to 20.04.2024)	Revision
16 th (22.04.2024 to 30.04.2024)	Revision

Asha

GOVT.COLLEGE, SAMPLA
LESSON PLAN
JANUARY 2024 to APRIL 2024

Name of the Assistant Professor: Dr Asha
Class : B.A.III (Sem-6)
Subject: Mathematics
Paper: Dynamics

Week	Description
1 st (01.01.2024 to 06.01.2024)	Introduction to Curriculum, Pre requisite Knowledge, Linear and Angular Velocity and acceleration along radial and transverse directions
2 nd (08.01.2024 to 13.01.2024)	Concept, Examples and Exercise related to Radial and Transverse Velocities and accelerations
3 rd (15.01.2024 to 20.01.2024)	Concept, Examples and Exercise related to Tangential and Normal Velocities and accelerations, Test
4 th (22.01.2024 to 27.01.2024)	Concept, Examples and Exercise related to Relative motion
5 th (29.01.2024 to 03.02.2024)	Simple Harmonic Motion: Concept, Examples and Exercise
6 th (05.02.2024 to 10.02.2024)	Elastic Strings: Concept, Examples and Exercise
7 th (12.02.2024 to 17.02.2024)	Newton laws of motion: Concept, Examples and Exercise, Test
8 th (19.02.2024 to 24.02.2024)	Work, Power: Concept, Examples and Exercise
9 th (26.02.2024 to 02.03.2024)	Energy, Conservative forces and Impulsive forces: Concept, Examples and Exercise
10 th (04.03.2024 to 09.03.2024)	Motion of a Particle on Smooth and Rough Plane Curves: Concept, Examples and Exercise.
11 th (11.03.2024 to 16.03.2024)	Projectile motion of a particle in a plane: Concept, Examples and Exercise, Test
12 th (18.03.2024 to 23.03.2024)	Central Orbits: Concept, Examples and Exercise.
13 th (01.04.2024 to 06.04.2024)	Kepler's laws of motion of Planetary Motion: Concept, Examples and Exercise
14 th (08.04.2024 to 13.05.2024)	Motion of a particle in three dimension: Concept, Examples and Exercise, Test
15 th (15.04.2024 to 20.04.2024)	Revision
16 th (22.04.2024 to 30.04.2024)	Revision

Asha

GOVT.COLLEGE, SAMPIA
LESSON PLAN
JANUARY 2024 to APRIL 2024

Name of the Assistant Professor: Mr Ashok Kumar
Class : B.Com-I (Sem-2)
Subject: Mathematics
Paper: Business Mathematics

Week	Description
1 st (01.01.2024 to 06.01.2024)	Definition of a Matrix, Types of Matrices, Algebra of Matrices; Basic Examples.
2 nd (08.01.2024 to 13.01.2024)	Determinants up to third order, Adjoint of a Matrix, elementary row and column operations.
3 rd (15.01.2024 to 20.01.2024)	Finding inverse matrix through Adjoint and elementary row or column operations.
4 th (22.01.2024 to 27.01.2024)	Solution of a system of Linear equations and exercise. Group Discussion and Test of Unit-1
5 th (29.01.2024 to 03.02.2024)	Solved and unsolved question of indices.
6 th (05.02.2024 to 10.02.2024)	Differentiation
7 th (12.02.2024 to 17.02.2024)	Application of differentiation
8 th (19.02.2024 to 24.02.2024)	Certain different types of interest rate and related Examples.
9 th (26.02.2024 to 02.03.2024)	Concept of present value and amount of a sum, Types of annuities, Exercise.
10 th (04.03.2024 to 09.03.2024)	Present value and amount of an annuity, including the case of continuous compounding.
11 th (11.03.2024 to 16.03.2024)	Group Discussion and Test of Unit -3
12 th (18.03.2024 to 23.03.2024)	Ratio, Proportion and related problems.
13 th (01.04.2024 to 06.04.2024)	Percentage, Profit and Loss.
14 th (08.04.2024 to 13.05.2024)	Group Discussion and Test of Unit - 4
15 th (15.04.2024 to 20.04.2024)	Revision
16 th (22.04.2024 to 30.04.2024)	Revision

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GOVT.COLLEGE, SAMPLA
LESSON PLAN
JANUARY 2024 to APRIL 2024

Name of the Assistant Professor: Mr Ashok Kumar
Class : B.A. III (Sem-6)
Subject: Mathematics
Paper: Linear Algebra

Week	Description
1 st (01.01.2024 to 06.01.2024)	Introduction to curriculum, Vector Spaces, subspaces, sum and direct sum of subspaces.
2 nd (08.01.2024 to 13.01.2024)	Linear span, Linearly dependent and independent subset of a vector space, Finitely generated vector space
3 rd (15.01.2024 to 20.01.2024)	Basis and dimension of a vector space: Concept and related theorems.
4 th (22.01.2024 to 27.01.2024)	Identical Spaces and Complementary Subspace
5 th (29.01.2024 to 03.02.2024)	Quotient space: Concept and related theorems, Test.
6 th (05.02.2024 to 10.02.2024)	Linear transformations, Vector Space Isomorphism of vector spaces
7 th (12.02.2024 to 17.02.2024)	Null space, Range space of a linear transformation, Rank and Nullity theorem. Class test.
8 th (19.02.2024 to 24.02.2024)	Algebra of Linear Transformation: Sum and Product of Linear Transformation, Singular and Non-Singular Transformation, Invertible Linear Transformation.
9 th (26.02.2024 to 02.03.2024)	Matrix of linear transformation, Change of basis, Dual Spaces, Bidual spaces, Annihilator of subspaces of finite dimensional vector spaces
10 th (04.03.2024 to 09.03.2024)	Eigen Values and Eigen vectors of Linear transformation, Diagonalisation, Minimal Polynomial of a Linear Transformation, Class Test.
11 th (11.03.2024 to 16.03.2024)	Inner Product spaces, Cauchy-Schwarz Inequality, Class test.
12 th (18.03.2024 to 23.03.2024)	Orthogonal compliments, Orthogonal sets and basis, Bessel inequality for finite dimensional vector space.
13 th (01.04.2024 to 06.04.2024)	Gram-Schmidt orthogonalization process, Adjoint of linear transformation.
14 th (08.04.2024 to 13.05.2024)	Properties of Linear transformation and Unitary linear transformation, Class test.
15 th (15.04.2024 to 20.04.2024)	Revision
16 th (22.04.2024 to 30.04.2024)	Revision

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GOVT.COLLEGE, SAMPLA
LESSON PLAN
JANUARY 2024 to APRIL 2024

Name of the Assistant Professor: Mr. Ashok KUMAR
Class : B.A. II (Sem-4)
Subject: Mathematics
Paper: Programming in C and Numerical Methods

Week	Description
1 st (01.01.2024 to 06.01.2024)	Introduction of curriculum, Some Prerequisite, Programmer's model of a computer, Algorithms, Flow charts.
2 nd (08.01.2024 to 13.01.2024)	Data types, Operators and expressions, Input / outputs functions, Class Test.
3 rd (15.01.2024 to 20.01.2024)	Decisions control structure: Decision statements, Logical and conditional statements. Class Test.
4 th (22.01.2024 to 27.01.2024)	Implementation of Loops, Switch Statement & Case control structures.
5 th (29.01.2024 to 03.02.2024)	Functions, The C Preprocessor, Test
6 th (05.02.2024 to 10.02.2024)	Arrays, Strings: Character Data Type, Standard String handling Functions, Arithmetic Operations on Characters
7 th (12.02.2024 to 17.02.2024)	Structures: Definition, using Structures, use of Structures in Arrays and Arrays in Structures.
8 th (19.02.2024 to 24.02.2024)	Files in C and Test
9 th (26.02.2024 to 02.03.2024)	Pointers: Pointers Data type, Pointers and Arrays, Pointers and Functions.
10 th (04.03.2024 to 09.03.2024)	Solution of Algebraic and Transcendental equations: Bisection Method, Regula-Falsi method, Secant method, Newton-Raphson's method.
11 th (11.03.2024 to 16.03.2024)	Newton's iterative method for finding pth root of a number, Order of convergence of above methods, Class Test.
12 th (18.03.2024 to 23.03.2024)	Simultaneous linear algebraic equations: Gauss-elimination method, Gauss-Jordan method
13 th (01.04.2024 to 06.04.2024)	Triangularization method (LU decomposition method), Crout's method, Cholesky Decomposition method
14 th (08.04.2024 to 13.05.2024)	Iterative method, Jacobi's method, Gauss-Seidal's method, Relaxation method.
15 th (15.04.2024 to 20.04.2024)	Revision
16 th (22.04.2024 to 30.04.2024)	Revision

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GOVT.COLLEGE, SAMPLA
LESSON PLAN
JANUARY 2024 to APRIL 2024

Name of the Assistant Professor: Mr. Ashok Kumar
Class : B.A. II (Sem-4)
Subject: Mathematics
Paper: Special Functions and Integral Transforms

Week	Description
1 st (01.01.2024 to 06.01.2024)	Introduction to Curriculum, Power series method and use it in finding solution of differential equation.
2 nd (08.01.2024 to 13.01.2024)	Beta and Gamma Functions and their properties, Bessel equation and finding its solution
3 rd (15.01.2024 to 20.01.2024)	Bessel Function and its properties-Convergence, Recurrence, Orthogonality of Bessel functions
4 th (22.01.2024 to 27.01.2024)	Legendre and Hermite differentials equations and their solutions
5 th (29.01.2024 to 03.02.2024)	Legendre and Hermite functions and their properties-Recurrence Relations and generating functions
6 th (05.02.2024 to 10.02.2024)	Orthogonality of Legendre and Hermite polynomials. Rodrigues' Formula for Legendre and Hermite Polynomials,
7 th (12.02.2024 to 17.02.2024)	Laplace Integral Representation of Legendre polynomial
8 th (19.02.2024 to 24.02.2024)	Laplace Transforms – Existence theorem for Laplace transforms, Linearity of the Laplace transforms, Shifting theorems
9 th (26.02.2024 to 02.03.2024)	Laplace transforms of derivatives and integrals, Differentiation and integration of Laplace transforms
10 th (04.03.2024 to 09.03.2024)	Convolution theorem, Inverse Laplace transforms, convolution theorem, Inverse Laplace transforms of derivatives and integrals
11 th (11.03.2024 to 16.03.2024)	Solution of ordinary differential equations using Laplace transform
12 th (18.03.2024 to 23.03.2024)	Fourier transforms: Linearity property, Shifting, Modulation, Convolution Theorem
13 th (01.04.2024 to 06.04.2024)	Fourier Transform of Derivatives, Relations between Fourier transform and Laplace transform
14 th (08.04.2024 to 13.05.2024)	Parseval's identity for Fourier transforms, solution of differential Equations using Fourier Transforms.
15 th (15.04.2024 to 20.04.2024)	Revision
16 th (22.04.2024 to 30.04.2024)	Revision

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GOVT.COLLEGE, SAMPLA
LESSON PLAN
JANUARY 2024 to APRIL 2024

Name of the Assistant Professor: Mr. Ashok KUMAR
Class: B.A. I (Sem-2)
Subject: Mathematics
Paper: Number Theory and Trigonometry

Week	Description
1 st (01.01.2024 to 06.01.2024)	Introduction to Curriculum, Basic concepts related to Divisibility
2 nd (08.01.2024 to 13.01.2024)	G.C.D. (greatest common divisors), L.C.M. (least common multiple), Primes, Fundamental Theorem of Arithmetic.
3 rd (15.01.2024 to 20.01.2024)	Linear Congruence, Linear Diophantine equations in two variables, Test
4 th (22.01.2024 to 27.01.2024)	Fermat's theorem, Wilson's theorem and its converse, Chinese Remainder Theorem, Complete residue system and Reduced residue system modulo m,
5 th (29.01.2024 to 03.02.2024)	Euler ϕ function, Euler's generalization of Fermat's theorem, Quadratic Residues.
6 th (05.02.2024 to 10.02.2024)	The number of divisors and the sum of divisors of a natural number n, Moebius function and Moebius Inversion Formula.
7 th (12.02.2024 to 17.02.2024)	Legendre Symbols, Lemma of Gauss, Gauss reciprocity law, Greatest integer function $[x]$.
8 th (19.02.2024 to 24.02.2024)	De-Moivre's Theorem and its Applications.
9 th (26.02.2024 to 02.03.2024)	Expansion of trigonometric functions
10 th (04.03.2024 to 09.03.2024)	Direct circular and hyperbolic functions and their properties
11 th (11.03.2024 to 16.03.2024)	Logarithm of a complex quantity and related results and problems.
12 th (18.03.2024 to 23.03.2024)	Inverse circular and hyperbolic functions and their properties
13 th (01.04.2024 to 06.04.2024)	Gregory's series, Summation of trigonometric series
14 th (08.04.2024 to 13.05.2024)	Short Answer Type Questions
15 th (15.04.2024 to 20.04.2024)	Revision
16 th (22.04.2024 to 30.04.2024)	Revision

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