P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2025-26) ODD SEMESTER

Name of Teacher: Jitender Kumar
Designation: Associate Professor
Subject: Business Mathematics
Class: B .Com 1st Semester

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	August	Set Theory: Representation of sets, equivalent sets, power sets complement of sets .Venn Diagrams: Union and Integration of sets De Morgan 's Law; Logical statements and truth tables .	
2	September	Logarithms: Law of proportion , Log tables; Arithmetic and geometric Progression Matrices and Determinants :- Definition of Matrix, order, equality types of Matrices .	Mid term exams
3	October	Matrices and Determinants :- Operation on Matrices : Addition, Multiplication and multiplication with a scalar and their simple properties , Determinants of a square matrix (up to 3*3order) properties of determinants ,minors co factors and applicatio0ns of determinants in finding the area of triangle.	Assignment
4	November	Adjoint of and inverse of a square matrix , solution of a system of linear equations by examples. Compound interest and annuities : Different types of interest rates , types of annuities , present values and amount of annuity (including the case of continuous compounding), valuation of simple loans and debentures , problems related sinking funds.	

- Vacation as per university calendar

  Mid term exams and assignment will be taken as per schedule

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2025-26) ODD SEMESTER

Name of Teacher: **Jitender Kumar**
Designation: Associate Professor
Subject: Mathematics
Class: SEC 3rd

Subject/Paper: Sr. No.	**Months**	**Topics to be covered**	**Remarks if any,**
1	August	Linear equation, quadratic equation ,system of algebraic equation in two variable and their applications in simple problems: clocks	
2	September	Time and distance: problem based on trains, boats, and streams ,pipe, and cistern. Work and time: problem on work and time ,work and wages	
3	October	Simple interest , compound interest, partnership. Basic idea of set theory to solve practical problem. Trigonometric ratio and identities, height and distance.	
4	November	Basic idea of permutation and combinations. Events and samples space probability. Data interpretation: raw and grouped data ,bar diagram ,pie chart ,mean ,median ,and mode	

- Vacation as per university calendar

Mid term exams and assignment will be taken as per schedule

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2025-26) ODD SEMESTER

Name of Teacher: **Jitender Kumar**
Designation: Associate professor
Subject : Introductory Mathematics
Class: 1st sem

Subject/Paper: Sr. No.	**Months**	**Topics to be covered**	**Remarks if any,**
1	August	Sets and their representations, Empty set, Finite and infinite sets, subsets, Equal sets, Power sets, Universal set, Union and interesection of sets, Difference of two sets, Complement of a set, Venn diagram, De-Morgan's laws and their types, operations on matrices, symmetric and skew symmetric matrices, Minors, co-factor. determinant of a square matrix, Adjoint and inverse of a square matrix.	
2	September	Complex numbers, Operations on complex numbers, Modulus and argument of a complex number. Linear inequalities, Algebraic solutions of linear inequalitiea in two variables and their graphical representation. Quadratic equations, solution of quadratic equation.	Mid term exams
3	October	Airthemetic progression, Geometric progression Harmonic progression, Arithmetic mean, Geometric mean, harmonic mean, Relationship betweenA. M., G. M. and H. M.	Assignment
4	November	Straight lines: slope of a line and angle between two lines, Different forms of equation of a line: Parallel to co_ordinate axes, Point _slope form, slope _intercept form a straight line. Standard form of a circle and it's properties.	

*Vacation as per university calendar

- Mid term exams and assignment will be taken as per schedule.

PIG.GOVT.COLLEGE FOR WOMEN,JIND

LESSON-PLAN (Session2025-26) ODDSEMESTER

Name of Teacher: Alpana Sharma

Designation: Assistant professor

Subject: Sequence and Series

Class: B.sc (N.M & CS) & B.A **5th sem.**

Subject/Paper: Sr.No.	**Months**	**Topics to be covered**	**Remarks if any,**
1	August	Boundedness of the set of real numbers, Least upper bound and Greatest lower bound of a set. Archimedean, algebraic and ordered properties in R. The real number system as a complete ordered field. Neighbourhoods, interior points, isolated points, limit points, Open sets, closed sets, interior of a set, closure of a set in real numbers and their properties. Bolzano-Weierstrass theorem. Open covers, compact sets and Heine-Borel theorem	
2	September	Denumerable and non-denumerable sets, Denumerability of integers, rationals and non-denumerability of real numbers. Sequences: Real sequences and their convergence, Theorems on limit of sequence, Bounded and monotonic sequences, Cauchy's sequence, Cauchy general principle of convergence, Subsequences and subsequential limits, Limit superior and limit inferior.	Mid term exams
3	October	Infinite series: Convergence and divergence of Infinite Series, Comparison tests of positive terms infinite series, Cauchy's general principle of Convergence of series, Convergence and divergence of geometric series, Hyper Harmonic series or pseries, D-Alembert's ratio test, Raabe's test, Logarithmic test, Cauchy's nth root test, De-Morgan and Bertrand's test, Gauss Test, Cauchy's integral test, Cauchy's condensation test.	Assignment
4	November	Alternating series, Absolute and conditional convergence, Leibnitz test. Arbitrary series, Abel's and Dirichlet's test, Insertion and removal of parenthesis, Re-arrangement of terms in a series, Riemann's re-arrangement theorem and Pringsheim's theorem (statement only). Cauchy product of series (definitions and examples only).	

- Vacation as per university calendar

Mid term exams and assignment will be taken as per schedule

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2025-26) ODD SEMESTER

Name of Teacher: Alpana Sharma
Designation: Assistant professor
Subject: Mathematics (Reasoning)
Class: 5th Semester VOC

Subject/Paper: Sr. No.	**Months**	**Topics to be covered**	**Remarks if any,**
1	August	Verbal Reasoning: Series Completion, Number series, Letter Series, Alpha numeric series, Wrong Letter Series, Repeat Series, Wrong Number Series, Number Analogy, Word Analogy.	
2	September	Coding and Decoding: Letter Coding, Number coding, Matrix coding, Place arrangement, Direction sense, Family-based puzzles; Blood Relationships.	Mid term exams
3	October	Arithmetic reasoning, Venn diagrams, Logical diagrams, Symbol Substitution.	Assignment
4	November	Non-verbal Reasoning: Choosing the odd figure, Word Analogy, Number Analogy, Water Images, Mirror Images.	

- Vacation as per university calendar

Mid term exams and assignment will be taken as per schedule

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND

LESSON-PLAN (Session 2025-26) ODD SEMESTER

Name of Teacher: Dr. Sandeep Kumar

Designation: Assistant professor

Subject: Calculus

Class: B.sc (N.M & CS) & B.A Ist sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	August	Limit, continuity, types of discontinuities and differentiability of functions. Successive differentiation of functions in implicit, explicit and parametric form. Lebnitz theorem. Application of L-hospital rule to indeterminate form. Some general theorems on differentiable functions and expansions. Taylor's theorem with Langrange's form and cauchy's form of remainder after n terms. Maclaurin's form and infinite series.	
2	September	Asymptotes parallel to coordinate axis and oblique Asymptotes in Cartesian and polar form. Singular points .Points of inflexion. Multiple points .Cusps, node and conjugate point.	Mid term exams
3	October	Tracing of curves .Reduction formulae, Rectification, Length of curves in Cartesian, parametric and polar curves particularly asteroids,cycloid and cardioid.intrinsic equations of curve.	Assignment
4	November	Quadrature(area) Sectorial area,Area bounded by closed curves in Cartesian, parametric form and polar form.volumes and surfaces of solids of revolution about x- axis and about any line	

*Vacation as per university calendar

- Mid term exams and assignment will be taken as per schedule.

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2025-26) ODD SEMESTER

Name of Teacher: PARVEEN
Designation: Assistant professor
Subject: Mathematics (Differential Equations-I)
Class: B.sc (N.M & CS) & B.A.3rd Semester

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	August	Basic concepts and genesis of ordinary differential equations, Order and degree of a differential equation, Solutions of differential equations of first order and first degree, Exact differential equations, Integrating factor, First order higher degree equations solvable for x, y and p. Lagrange's equations, Clairaut's form and singular solutions. Orthogonal trajectories of one-parameter families of curves in a plane.	
2	September	Solutions of linear ordinary differential equations with constant coefficients, linear non-homogeneous differential equations. Linear differential equation of second order with variable coefficients. Method of reduction of order, method of undetermined coefficients, method of variation of parameters. Cauchy-Euler equation.	Mid term exams
3	October	Solution of simultaneous differential equations, total differential equations.Genesis of Partial differential equations (PDE), Concept of linear and non-linear PDEs. Complete solution, general solution and singular solution of a PDE. Linear PDE of first order. Lagrange's method for PDEs of the form: $P(x, y, z)\, p + Q(x, y, z)\, q = R(x, y, z)$.	Assignment
4	November	Integral surfaces passing through a given curve. Surfaces orthogonal to a given system of surfaces. Compatible systems of first order equations. Charpit's method, Special types of first order PDEs, Jacobi's method. Second Order Partial Differential Equations with Constant Coefficients.	

Vacation as per university calendar

Mid term exams and assignment will be taken as per schedule

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2025-26) ODD SEMESTER

Name of Teacher: **Vikram Gupta**
Designation: Assistant professor
Subject Mathematics for all
Class: 3rd sem

Subject/Paper: Sr. No.	**Months**	**Topics to be covered**	**Remarks if any,**
1	August	The concept of a set, types of sets, operations on sets, venn diagram, De-Morgan's laws. The concept of a function, Elementary functions and their graphical representation. Solution of simple quadratic and cubic equations, Solution of simulataneous linear equations up to three variables. Arithmetic progression, Geometric progression.	
2	September	The concept of differentiation, differentiation of simple functions, second order differentiation, Maxima and minima of a function, Use of differentiation for solving problems related to real life situations. Integration of simple algebraic, trigonometric and exponential functions.	Mid term exams
3	October	Presentation of data: freauency distribution and cumulative frequency distribution, Diagrammatic and graphical presentation of data, construction of bar, Pie diagrama, Histograms, Freauency curve and Ogives. Measures of central tendency: Airthmetic mean, Median, Mode, Geometric mean and Harmonic mean for ungrouped and grouped data. Measures of dispersion: Concept of dispersion, mean deviation and its corfficient, Range, Variance and its coefficient, standard deviation.	Assignment
4	November	Correlation: concept and types of correlation, Methods of finding correlation: Scatter, diagram, karl Pearson's coefficients of correlation, Rank correlation. Linear regression: Principle of least square, Fitting of straight line, Two lines of regression coefficients. Solution of differential equations of first order and degree .	

- Vacation as per university calendar
- Mid term exams and assignment will be taken as per schedule.

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2025-26)ODD SEMESTER

Name of Teacher: **Vikram Gupta**
Designation: Assistant professor
Subject: Mathematics
Class: Bsc I single major Advanced calculus

Subject/Paper: Sr. No.	**Months**	**Topics to be covered**	**Remarks if any,**
1	August	Continuity, Sequential continuity, properties of continuous functions, Uniform continuity, Chain rule of differentiability. Mean value theorems, Rolle's theorem and Lagrange's mean value theorem and their geometrical interpretations.	
2	September	Taylor's Theorem with various form of remainders, Darboux intermediate value theorem for derivatives, Limit and continuity of real valued functions of two variables. Partial differentiation, Total differentials; Composite functions and implicit functions	
3	Oct	Change of variables. Homogeneous functions and Euler's theorem on homogeneous functions. Taylor's theorem for functions of two variables. Differentiability of real valued functions of two variables. Schwarz and Young's theorem. Implicit function theorem. Maxima, Minima and saddle points of two variables. Lagrange's method of multipliers	
4	November	Jacobians, Beta and Gama functions, Double and Triple integrals, Dirichlets integrals, change of order of integration in double integrals.	

- Vacation as per university calendar

Mid term exams and assignment will be taken as per schedule

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2025-26) ODD SEMESTER

Name of Teacher: Vikram Gupta
Designation: Assistant professor
Subject: Mathematics Paper : Numerical Ability Enhancement Skills
Class: 1st year

Subject/Paper: Sr. No.	**Months**	**Topics to be covered**	**Remarks if any,**
1	August	Real number system, operation on numbers, test for divisibility of natural numbers, decimals, fractions, square roots, cube roots, surds and indices, use of BODMAS	
2	September	HCF,LCM of integers, ratio, and proportion, progressions: A.P,G,P and H.P with their simple and practical applications, number series ,	
3	October	Percentage profit and loss , allegation or mixture , average , average speed problem , calendar.	
4	November	Logarithms, area of quadrilaterals, volume and surface area of cube , cuboid ,cylinder , cone ,sphere and hemisphere	

*Vacation as per university calendar

- 2 assignments and 01 unit test will be taken as per schedule.