ACADEMIC PLANNER & UNITIZATION OF SYLLABUS

ACADEMIC YEAR 2024-25(SEP)

DEPARTMENT: Mathematics **CLASS: II Semester**

MONTH/YEAR	WEEK	PORTIONS	TEACHERS
Feb 2025	3	Algebraic structure – Groups, Introduction	JMC
		Definition of limit, continuity, differentiability	JMC
		Introduction and definition of polar coordinates	SSM
		Integral calculus, Introduction	LP
	4	Binary operation, problems on it	JMC
		Problems on limits, continuity, differentiability	JMC
		Angle between the radius vector and tangent, problems	SSM
		Application of integral calculus computation of length of arc, problems	LP
March 2025	1	Problems on finding identity and inverse	JMC
		Properties of continuous functions	JMC
		Angle of intersection of two curves, problems	SSM
		Definition of plane area and surface area, problems	LP
	2	Definition of semi grp and group, abelian grp, problems	JMC
		Intermediate value theorem, Mean value theorem	JMC
		Length of perpendicular from pole to the tangent, problems	SSM
		Volume of solids evaluations for standard curves in Cartesian, problems	LP
	3	Problems on finite groups	JMC
		Rolle's theorem, problems	JMC
		Pedal equation, derivative of arc in Cartesian parametric and polar forms, problems	SSM
		Volume of solids evaluations for standard curves in polar forms, problems	LP
	4	Problems on infinite groups	JMC
		Lagrange's mean value theorem, problems	JMC
		Definition of curvature of plane curve, problems	SSM
		Improper integral of first kind, problems	LP
April 2025	1	Properties of groups with proof	JMC
		Cauchy's mean value theorem and problems	JMC
		Radius of curvature formula in Cartesian, problems	SSM
		Improper integral of second kind, problems	LP
	2	INTERNAL TEST	
		INTERNAL TEST	

		INTERNAL TEST	
		Improper integral of third kind, problems	**LP**
	3	**Standard problems on groups, Semi grp problems**	**JMC**
		Indeterminate forms, L'Hospital's rule, problems	**JMC**
		Definition of parametric, polar, pedal forms, problems	**SSM**
		Improper integral of third kind, problems	**LP**
	4	**Order of a grp, properties of order**	**JMC**
		L'Hospital's rule, problems	**JMC**
		Centre of curvature evolutes, problems	**SSM**
		Prove that improper integral as the limit of proper integral	**LP**
May 2025	**1**	**Definition of subgroups, theorems on subgroups with proof**	**JMC**
		L'Hospital's rule, problems	**JMC**
		Definition of asymptotes, singular points and double points, problems	**SSM**
		Improper integral has the limit of proper integral, problems	**LP**
	2	**Problems on subgroups**	**JMC**
		L'Hospital's rule, problems	**JMC**
		Definition of asymptotes, singular points and double points, problems	**SSM**
		Improper integral as the limit of proper integral, problems	**LP**
	3	**Revision of model papers**	**JMC**
		Revision of model papers	**JMC**
		Revision of model papers	**SSM**
		Revision of model papers	**LP**
	4	**Conducted mock test**	
		Conducted preparatory	

ACADEMIC PLANNER & UNITIZATION OF SYLLABUS

ACADEMIC YEAR 2024-25

DEPARTMENT: Mathematics **CLASS: Fourth Semester**

Feb 2025	3	Formation of PDE	LP
		Elimination pf arbitrary constant	LP
		Definition of Laplace transform standard properties	JMC
		Fourier Series definition Euler's formula	SSM
	4	Elimination of arbitrary functions	LP
		Elimination of arbitrary functions	LP
		Laplace transform of standard functions	JMC
		Periodic functions ,Fourier coefficients	SSM
March 2025	1	Linear P.D.E of first order	LP
		Linear P.D.E of first order-problems	LP
		Transforms of periodic functions	JMC
		Fourier Series of functions with period 2pi	SSM
	2	First order nonlinear PDE type I	LP
		Reducible to type I	LP
		Inverse Laplace transforms	JMC
		Fourier Series of functions with period 2pi	SSM
	3	First order nonlinear PDE type II	LP
		Reducible to type II	LP
		Inverse Laplace transforms	JMC
		Fourier series of functions with period 2L	SSM
	4	First order nonlinear PDE type III	LP
		Reducible to type III	LP
		Inverse Laplace transforms	JMC
		Fourier series of even and odd functions	SSM
April 2025	1	First order nonlinear P.D.E type III & IV	LP
		Reducible to type III&IV, Charpit's method	LP

		The convolution theorem	JMC
		Half range – expansion-sine -cosine	SSM
	2	INTERNAL TEST	
		INTERNAL TEST	
		INTERNAL TEST	
		Finite Fourier transforms	SSM
	3	First order nonlinear P.D.E type III & IV	LP
		Reducible to type III&IV, Charpit's method	LP
		The convolution theorem	JMC
		Half range – expansion-sine -cosine	SSM
	4	Finding complementary function	LP
		Finding particular integral	LP
		Transforms of derivatives	JMC
		Finite Fourier transforms cosine and sin	SSM
May 2025	1	Finding particular integral	LP
		Solving linear PDE with constant coefficients	LP
		Transforms of integrals	JMC
		Transforms derivatives	SSM
	2	Non-homogeneous linear equations with constant coefficients	LP
		Problem on the above	LP
		Transforms of integrals, Heaviside, unit step fn.	JMC
		Inverse Fourier transforms	SSM
	3	Solutions of one-dimensional heat and wave equation using Fourier series	LP
		Wave equation –problems, revision model papers	LP
		Conducted mock test	
		Conducted preparatory exam	

ACADEMIC PLANNER & UNITIZATION OF SYLLABUS
ACADEMIC YEAR 2024-25

DEPARTMENT: Mathematics **CLASS: Fourth Semester (OE) Quantitative Mathematics**

MONTH/YEAR	WEEK	PORTIONS	Teachers
Feb 2025	4	Number system: Introduction	SSM
		Theory of equations: Introduction & Basic definition	JMC
		Quantitative Aptitude: Introduction and simple problems	JMC
March 2025	1	Operations on numbers	SSM
		Linear equations, problems	JMC
		Percentage, average, problems	JMC
	2	Tests on divisibility, problems	SSM
		Quadratic equations, problems	JMC
		Average speed, problems	JMC
	3	Problems on tests on divisibility, HCF, LCM	SSM
		Simultaneous equations in 2 variables, problems	JMC
		Speed, Time, problems	JMC
	4	Problems on HCF and LCM	SSM
		Simple application problems	JMC
		Time-distance problems	JMC
April 2025	1	Problems on decimals	SSM
		Application problems on different types of equations	JMC
		Problems on Time-Distance	JMC
	2	INTERNAL TEST	
		INTERNAL TEST	
		INTERNAL TEST	
	3	Problems on fractions, Problems on simplification of decimals and fractions	SSM
		Problems on ages, conditional ages	JMC
		Application problems on trains, time, distance	JMC
	4	Problems on square roots	SSM
		Application problems on conditional age calculations	JMC
		Problems on work and time	JMC

May 2025	1	Problems on cube roots	SSM
		Problems on present and past age calculations	JMC
		Application problems on work and time	JMC
	2	Application problems on square roots and cube roots	SSM
		Application problems on past and present age calculations	JMC
		Problems on work and wages, clock and calendar	JMC
	3	Problems on surds	SSM
		Revision on main chapters	JMC
		Problems on clock and calendar	JMC
	4	Revision of model papers	SSM
		Revision of model papers	JMC
		Conducted Preparatory exam	

ACADEMIC PLANNER & UNITIZATION OF SYLLABUS
ACADEMIC YEAR 2024-25

DEPARTMENT: Mathematics **CLASS: VI Semester Paper 6.1**

MONTH/YEAR	WEEK	PORTIONS	Teachers
March 2025	1	Definition and properties of rings	SSM
		Rings of integers modulo n	SSM
		Subrings	SSM
		Definition Variation of a function, functional	LP
	2	Ideals definition and types	SSM
		Examples of ideals	SSM
		Properties of ideals	SSM
		Properties of variation , extremal definition	LP
	3	Homomorphism , isomorphism of rings	SSM
		Properties. definition of Quotient rings, Integral domain, Field	SSM
		Examples on Integral domain and field	SSM
		Extremal of a functional, variational problem	LP
	4	Properties of Integral domain and field	SSM
		Fundamental theorem of homomorphism of rings	SSM
		Every field is an integral domain and converse with examples	SSM
		Euler's equation and particular forms	LP
April 2025	1	Vector spaces definition and examples	SSM
		Properties and problems	SSM
		Subspaces examples	SSM
		Problems on Euler's equation and particular forms	LP
	2	INTERNAL TEST	
		INTERNAL TEST	
		INTERNAL TEST	
		Problems on Euler's equation and particular forms	LP
	3	Criterion for a subspace and examples Properties of linear dependence and independence	SSM
		Linear combination and problems on it	SSM
		Linear span , linear dependence and independence and problems on it, Basis and dimension	SSM
		Problems on particular forms	LP
	4	Quotient space and examples	SSM
		Sum and direct sum of subspaces	SSM

MONTH/YEAR	WEEK	PORTIONS	Teachers
		Theorems on subspaces	SSM
		Standard geodesics	LP
May 2025	1	Linear transformation definition and examples	SSM
		Linear transformation to matrix form	SSM
		Matrix form to linear transformation	SSM
		Minimal surface of revolution, hanging chain problem	LP
	2	definition of rank, nullity, Null space, range space	SSM
		Rank Nullity theorem and problems on it	SSM
		Problems on finding rank, nullity, Null space, range space	SSM
		Brachistochrone problem	LP
	3	Eigen values and eigen vectors of linear transformation	SSM
		Problems on Eigen values and eigen vectors	SSM
		Problems on Eigen values and eigen vectors	SSM
		Isoperimetric problem, problems on it	LP
	4	Revision of Model papers	SSM
		Revision of Model papers	LP
		Conducted mock test	
		Conducted preparatory exam	

ACADEMIC PLANNER & UNITIZATION OF SYLLABUS
ACADEMIC YEAR 2024-25

DEPARTMENT: Mathematics **CLASS: VI Semester Paper 6.2**

MONTH/YEAR	WEEK	PORTIONS	Teachers
March 2025	1	Errors, types of errors	JMC
		Gauss elimination	JMC
		Finite differences	SSM
		Formula for derivatives based on interpolation	JMC
	2	Related problems on errors	JMC
		Gauss Jordan method	JMC
		Problems on finite differences	SSM
		Derivatives using Newton's forward and backward interpolation	JMC
	3	General error formula and related problems	JMC
		Gauss Jacobi method	JMC
		Forward and backward difference	SSM
		Problems based on derivatives	JMC
	4	Taylor's series	JMC
		Gauss Seidel method	JMC
		Shift operator ,Properties	SSM
		Problems based on derivatives	JMC
April 2025	1	Bisection method	JMC
		Successive over relaxation method	JMC
		Problems on operators	SSM
		Numerical integration, general quadrature formula	JMC
	2	INTERNAL TEST	
		INTERNAL TEST	
		INTERNAL TEST	
		Trapezoidal rule	JMC
	3	Problems on bisection method, Regula falsi method	JMC
		Power method	JMC
		Newton Gregory forward difference formula and problems	SSM
		Problems on trapezoidal rule	JMC
	4	Newton Raphson method	JMC
		Problems on power method	JMC

MONTH/YEAR	WEEK	PORTIONS	Teachers
		Newton Gregory backward difference formula and problems	SSM
		Simpson's 1/3rd rule	JMC
May 2025	1	Secant method	JMC
		Miscellaneous problems	JMC
		Lagrange's interpolation formula and problems	SSM
		Simpson's 3/8th rule	JMC
	2	Miscellaneous problems	JMC
		Miscellaneous problems	JMC
		Newton's divided differences and problems	SSM
		Weedle's rule	JMC
	3	Miscellaneous problems	JMC
		Miscellaneous problems	JMC
		Newton's general interpolation formula	SSM
		Miscellaneous problems	JMC
	4	Revision of Model papers	JMC
		Revision of Model papers	JMC
		Revision of Model papers	SSM
		Revision of Model papers	JMC
June 2025	1	Conducted preparatory exam	
		Conducted mock test	