(ಪ್ರಯೋಗರಹಿತ ವಿಷಯಗಳು)

ವಿಷಯ: **MATHEMATICS** ಸಂಕೇತ: 35 ತರಗತಿ : ದ್ವಿತೀಯ ಪಿಯುಸಿ

ಕ್ರ ಸಂ	ಅವಧಿ	ನಿಗದಿಪಡಿಸಿದ ಅಧ್ಯಾಯಗಳು	ಲಭ್ಯ ಅವಧಿಗಳು
1	ಮೊದಲ ಅವಧಿ 15–07–2021 ರಿಂದ 15–09–2021 ರವರೆಗೆ	I**. Relations and Function 1.1 to 1.3** (Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.) 2. **Inverse Trigonometric Functions 2.1** (Definition, range, domain, principal value branch.) 3. **Matrices 3.1 to 3.6** (Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Noncommutativity of multiplication of matrices, Invertible matrices; (Here all matrices will have real entries) 4. **Determinants 4.1, 4.2, 4.4 to 4.7** (Determinant of a square matrix (up to 3 x 3 matrices), minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.) 5.**Continuity and Differentiability 5.1to 5.4** **(Limits and Derivatives first PUC revision 2 hours)** (Continuity and differentiability, derivative of composite functions, chain rule, derivative of inverse trigonometric functions, derivative of implicit functions. Concept of exponential and logarithmic functions.)	6 hours 3 hours 7 hours 8hours 12hours
2	1ನೇ ಕಿರುಪರೀಕ್ಷೆ 13–09–2021 ರಿಂದ 15–09–2021 ರವರೆಗೆ	ಮೊದಲ ಅವಧಿಯಲ್ಲಿ ಬೋಧಿಸಿದ ಪಠ್ಯವಸ್ತು ವಾರ್ಷಿಕ ಪರೀಕ್ಷೆಯ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯ ಮಾದರಿಯಲ್ಲಿಯೇ ಪರೀಕ್ಷೆಗಳು ನಡೆಯುವವು	
3	ಅಸೈನ್ ಮೆಂಟ್ –1	ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ತಾರ್ಕಿಕ ಚಿಂತನೆಗೊಳಿಸುವ ವಿಷಯಗಳನ್ನು ನೀಡುವುದು	

4	ಎರಡನೇಅವಧಿ 16–09–2021 ರಿಂದ 30–11–2021ರವರೆಗೆ	5.**Continuity and Differentiability 5.5, 5.6 and 5.7** (Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives)	7hours
		6**. Applications of Derivatives 6.3 to 6.6** (increasing/decreasing functions, tangents and normals, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as reallife situations)	7hours
		7. **Integrals 7.1 to 7.6** (Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types $\int \frac{1}{a^2+x^2}dx, \int \frac{1}{a^2-x^2}dx, \int \frac{1}{x^2-a^2}dx, \int \frac{1}{\sqrt{x^2-a^2}}dx, \int \frac{1}{\sqrt{x^2+a^2}}dx, \int \frac{1}{\sqrt{a^2-x^2}}dx$, and problems based on them.)	14hours
		12**. Linear Programming** (Introduction, related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems. Graphical method of solution for problems in two variables, feasible and infeasible regions (bounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).	5 hours
5	ಅಸ್ಸೈನ್ ಮೆಂಟ್ –2	ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ತಾರ್ಕಿಕ ಚಿಂತನೆಗೊಳಿಸುವ ವಿಷಯಗಳನ್ನು ನೀಡುವುದು	
6	ಮದ್ಯ ವಾರ್ಷಿಕ ಪರೀಕ್ಷೆ 20–11–2021 ರಿಂದ 30–11–2021 ರವರೆಗೆ	1 ಮತ್ತು 2ನೇ ಅವಧಿಯಲ್ಲಿ ಬೋಧಿಸಿದ ಒಟ್ಟು ಪಠ್ಯವಸ್ತುವನ್ನು ಆಧರಿಸಿ	

7	ಮೂರನೇಅವಧಿ 01–12–2021 ರಿಂದ 30–01–2022ರವರೆಗೆ	**7.Integrals 7.7 to 7.10** Fundamental Theorem of Calculus (without proof).Basic properties of definite integrals and evaluation of definite integrals.	6hours
		8. Applications of the Integrals 8.1 Applications in finding the area under simple curves, especially lines, parabolas; area of circles /ellipses (in standard form only) (the region should be clearly identifiable)	3hours
		9. Differential Equations 9.1 ot 9.3,9.5 (Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree of the type: $dy/dx = f$(y/x). Solutions of linear differential equation of the type: dy/ dx + py = q, where p and q are functions of x or constant.)	6 hours
		10. Vector 10.110.6 (Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors)	7 hours
		11. Three - dimensional Geometry (Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Distance of a point from a plane.)	7 hours
		13. Probability (Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution.)	7 hours
8	2ನೇ ಕಿರುಪರೀಕ್ಷೆ 28–01–2022 ರಿಂದ	3ನೇ ಅವಧಿಯಲ್ಲಿ ಬೋಧಿಸಿದ ಪಠ್ಯವಸ್ತು	

	31–01–2022 ರವರೆಗೆ		
9	ನಾಲ್ಕನೇ ಅವಧಿ 01–02–2022 ರಿಂದ 31–03–2022ರವರೆಗೆ	1. Relations and Functions (Composite functions, Invertible functions and Binary operations)	4hours
		2. Inverse Trigonometric Functions (Properties of Inverse trigonometric functions and problems)	4 hours
		3. Matrices (Inverse of a matrix by elementary operations)	2 hours
		4. Determinants (Properties of Determinants and problems)	3 hours
		5. Continuity and Differentiability (Mean Value Theorem andRolle's Theorem)	2hours
		6. Application of Derivatives (Rate of change of quantities and Approximation)	3hours
		7.Integration (Definite integral as alimit of a sum)	2hours
		8. Application of Integrals (Area bounded by curve and line Area between two curves)	4hours
		9.Differential Equation (Formation of a Differential Equation whose General Solution is given. Solution of Linear differential equation of the type dx/dy +py=q)	3 hours
		10. vector (Scalar triple product of three vectors and problems)	2hours
		11. Three Dimensional Geometry (Angle between two lines, Angle between two planes and Angle between line and planes)	3hours
		13. Probability (Mean and Variance of a Random variable. Bernoulli Trials an Binomial Distribution)	4 hours
10	ಪೂರ್ವ ಸಿದ್ಧತಾ ಪರೀಕ್ಷೆ 24–03–2022 ರಿಂದ 30–03–2022	ಪೂರ್ಣ ಪ್ರಮಾಣದ ಪಠ್ಯವಸ್ತು	
11	ವಾರ್ಷಿಕ ಪರೀಕ್ಷೆ ಎಪ್ರಿಲ್ ಮೊದಲ ವಾರ	ಪೂರ್ಣ ಪ್ರಮಾಣದ ಪಠ್ಯವಸ್ತು	