

MATHEMATICS II PUC

1. Relations and Functions

RETAINED PORTION	DELETED PORTION
Introduction Types of Relations Types of Functions Binary Operations	Composition functions, inverse of a function.

2. Inverse Trigonometric Functions

RETAINED PORTION	DELETED PORTION
Introduction Basic Concepts Principal values	Graphs of inverse trigonometric functions Elementary properties of inverse trigonometric functions

3. Matrices

RETAINED PORTION	DELETED PORTION
Introduction Matrix Types of Matrices Operations on Matrices Transpose of a Matrix Symmetric and Skew Symmetric Matrices Invertible matrices	Existence of non-zero matrices whose product is the zero matrix. Concept of elementary row and column operations. proof of the uniqueness of inverse, if it exists.

4. Determinants

RETAINED PORTION	DELETED PORTION
Introduction Determinant Area of a Triangle Minors and Cofactors Adjoint and Inverse of a Matrix Applications of Determinants and Matrices	Properties of determinants. Consistency, inconsistency and number of solutions of system of linear equations by examples.

5. Continuity and Differentiability

RETAINED PORTION	DELETED PORTION
Introduction Continuity Differentiability Exponential and Logarithmic Functions Logarithmic Differentiation Derivatives of Functions in Parametric Form Second Order Derivative	Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretation

6. Application of Derivatives

RETAINED PORTION	DELETED PORTION
Introduction Rate of Change of Quantities Increasing and Decreasing Functions Tangents and Normals Maxima and Minima	Rate of change of bodies, use of derivatives in approximation

7. Integrals

RETAINED PORTION	DELETED PORTION
Introduction Integration as an Inverse Process of Differentiation Methods of Integration Integrals of some Particular Functions Integration by Partial Fractions Integration by Parts Definite Integral Fundamental Theorem of Calculus Evaluation of Definite Integrals by Substitution Some Properties of Definite Integrals	$\int \sqrt{ax^2 + bx + c} \cdot dx$ $\int (ax + b) \sqrt{ax^2 + bx + c} \cdot dx$ Definite integral as a limit of a sum

8. Applications of Integrals

RETAINED PORTION	DELETED PORTION
Introduction Area under simple curves	Area between any of the two above said curves

9. Differential Equations

RETAINED PORTION	DELETED PORTION
Introduction Basic Concepts Particular Solutions of a differential Equation Methods of Solving First order, First Degree Differential Equations	Formation of differential equation whose general solution is given. Solutions of linear differential equation of the type: $\frac{dx}{dy} + Px = Q$, where P and Q are functions of y or constants

10. Vector Algebra

RETAINED PORTION	DELETED PORTION
Introduction Some Basic Concepts Types of Vectors Addition of Vectors Multiplication of a Vector by a Scalar Product of Two Vectors	Scalar triple product of vectors.

11. Three Dimensional Geometry

RETAINED PORTION	DELETED PORTION
Introduction Direction Cosines and Direction Ratios of a Line Equation of a Line in Space Shortest Distance between Two Lines Plane Coplanarity of Two Lines Distance of a Point from a Plane	Angle between (i) two lines, (ii) two planes, (iii) a line and a plane

12. Linear Programming

RETAINED PORTION	DELETED PORTION
Introduction Linear Programming Problem and its Mathematical Formulation Different Types of Linear Programming Problems	Mathematical formulation of L.P. problems (unbounded)

13. Probability

RETAINED PORTION	DELETED PORTION
Introduction Conditional Probability Multiplication Theorem on Probability Independent Events Bayes' Theorem.	Mean and variance of random variable. Binomial probability distribution.