



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Coimbatore-641035.



UNIT 2- Orthogonal Transformation of a Real Sym Matrix

Nature of Quadratic Form

Nature of the quadratic form :-

1) Rank :-

The number of non-zero eigen values.

2) Index :-

The number of positive square terms.

3) signature :- The difference between positive and negative square terms.

4) Nature :-

The nature of the quadratic forms. are 5 cases.



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UNIT 2- Orthogonal Transformation of a Real Symmetric Matrix Nature of Quadratic Form



CASES :-

1) positive definite :- All the eigen values are positive. Its nature is positive definite.

2) Negative definite :- All the eigen values are negative.

3) positive semidefinite :- All the eigen values are positive and atleast one is zero.

4) Negative semidefinite :- All the eigen values are negative and atleast one is zero.

5) Indefinite :- "A" has both positive and negative eigen values.