



LET'S CRACK GATE & ESE - EE, ECE

Crack GATE & ESE with
India's largest learning platform

Get Plus subscription for access unlimited live and recorded
courses by India's best educators

Vizle



<https://vizle.offnote.co>

Contact us: vizle@offnote.co

This document was generated automatically by **Vizle**

Your **Personal Video Reader Assistant**

Learn from Videos **Faster** and **Smarter**

VIZLE PRO / BIZ

- Convert *entire* videos ^{PDF, PPT}
- *Customize* to retain all essential content
- Include Spoken *Transcripts*
- Customer support

Visit <https://vizle.offnote.co/pricing> to learn more

VIZLE FREE PLAN

- Convert videos *partially* ^{PDF only}
- Slides may be *skipped**
- Usage restrictions
- No Customer support

Visit <https://vizle.offnote.co> to try free

Login to Vizle to unlock more slides*



Types of Matrix

- > Rectangular and Square Matrix ✓
- ◇ Row & Column Matrix ✓
- ◇ Diagonal Matrix ✓
- ◇ Scalar Matrix ✓
- ◇ Unit/Identity Matrix ✓
- ◇ Null Matrix ✓
- ◇ Upper/Lower Triangular Matrix
- ◇ Idempotent Matrix
- ◇ Nilpotent Matrix
- ◇ Involutory Matrix: $A^2 = I$

Handwritten examples of matrices:

$$\begin{bmatrix} 2 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 2 \end{bmatrix}$$
 (A 3x3 diagonal matrix with 2s on the diagonal, circled in red. A red circle with 'Ip' is written next to it.)

$$\begin{bmatrix} 2 \\ 0 \\ 0 \end{bmatrix}$$
 (A 3x1 column matrix with 2, 0, 0, circled in blue.)

$$\begin{bmatrix} a & & \\ 0 & b & \\ 0 & 0 & c \end{bmatrix}$$
 (A 3x3 upper triangular matrix with elements a, b, c on the diagonal.)



Vizle Determinant of Matrix

Condition for Determinant

Pen

◇ For a square matrix $A = [a_{ij}]_{n \times n}$ 'n' is the order of Determinant

◇ For $n=2 \Rightarrow A = \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix}$

Determinant $|A| = (a_{11}a_{22} - a_{12}a_{21})$

 Maximum number of Linearly independent row (column)

Pen

$\rho(A)$

Why rank? 

Interchanging (rows/columns) does not change rank

Linear System of Equations



Homogeneous equations



Non-Homogeneous Equations

$AX = 0$

$AX = b$

Trivial? ?
 zero

$\rho(A) = \dots$

$\rho(A) = \dots$
 Infin

* * consistent

Vizie



Eigen Value (λ)



Pen

◇ Also known as 'Characteristic Value'

◇ AX

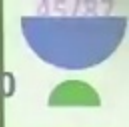
◇ $(A - \lambda I)X = 0$

Characteristic Equation

Vizle



Code :
MATHS1010



TELEGRAM : UNACADEMY-PRIYANKA SHARMA



<https://vizle.offnote.co>

Contact us: vizle@offnote.co

This document was generated automatically by **Vizle**

Your **Personal Video Reader Assistant**

Learn from Videos **Faster** and **Smarter**

VIZLE PRO / BIZ

- Convert *entire* videos ^{PDF, PPT}
- *Customize* to retain all essential content
- Include Spoken *Transcripts*
- Customer support

Visit <https://vizle.offnote.co/pricing> to learn more

VIZLE FREE PLAN

- Convert videos *partially* ^{PDF only}
- Slides may be *skipped**
- Usage restrictions
- No Customer support

Visit <https://vizle.offnote.co> to try free

Login to Vizle to unlock more slides*