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ARJUN BATCH

CLASS 11th | PHYSICS

मात्रक एवं मापन

UNITS AND MEASUREMENT



अध्याय-1 | भाग-5

एकदम BASIC से!

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आज क्या पढेंगे ?



1 महत्त्वपूर्ण विमाएँ

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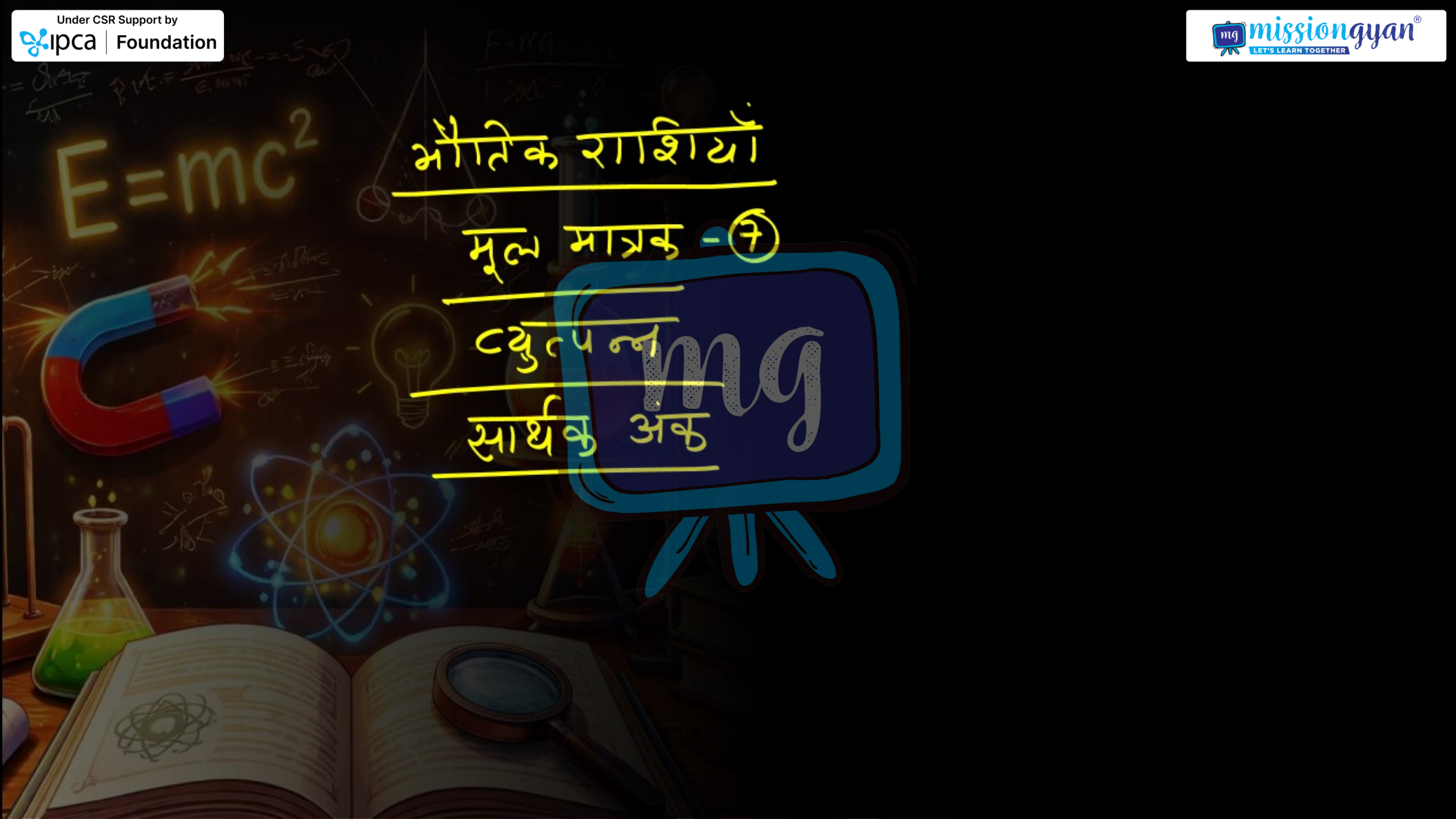

भौतिक राशियाँ

मूल मात्रक - ⑦

व्युत्पन्न

सार्थक अंक

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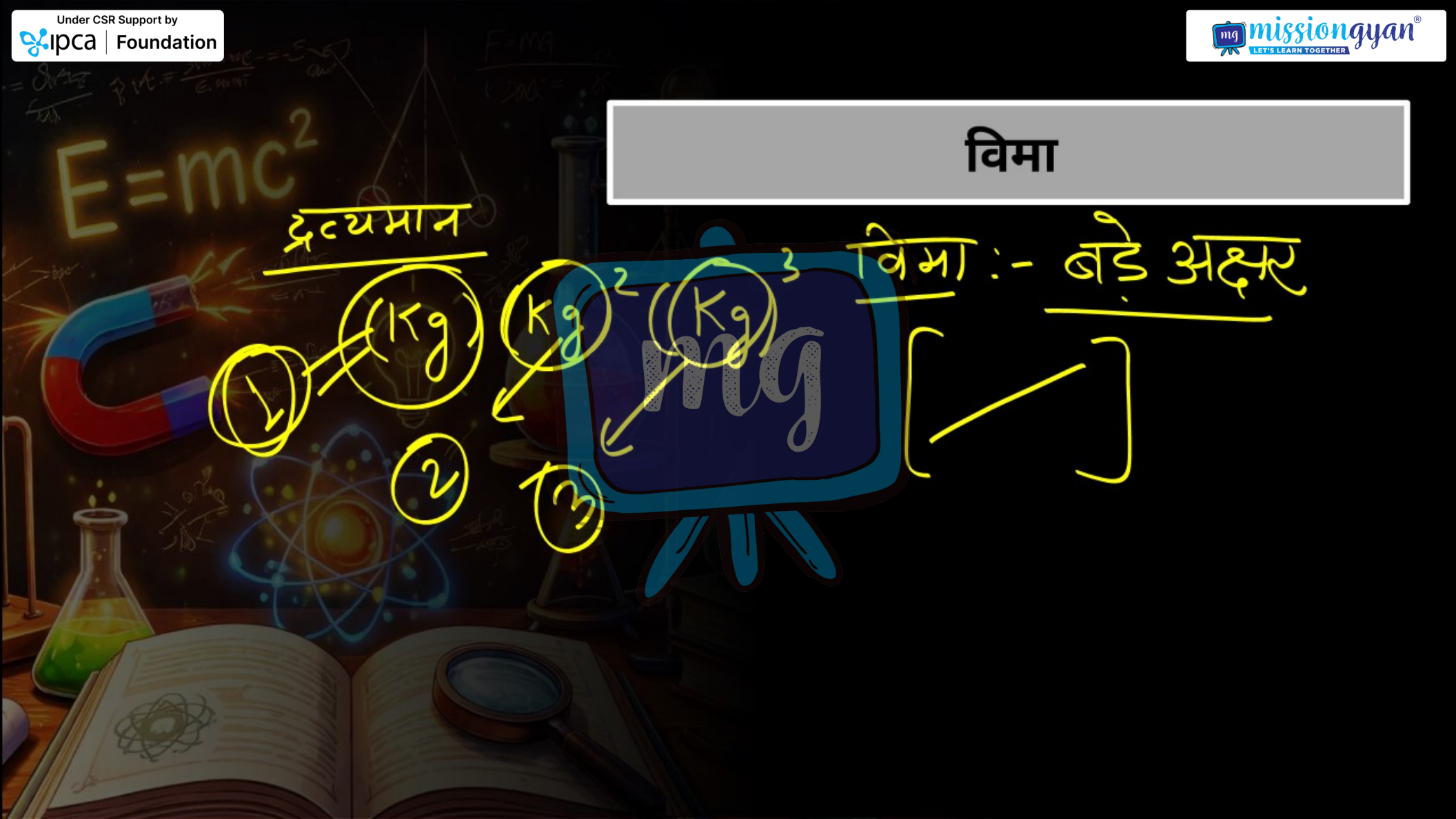
विमा



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विमा

$\frac{(M^0L^1T^{-1})\ [LT^{-1}]}{\text{द्रव्यमान}}$

Kg → Mass [m]

metre → Length [L]

sec → Time [T]

क्षेत्रफल → मीटर^2

$[L^2]$

आयतन → मीटर^3

चाल – दूरी / समय → मीटर / सैकण्ड $\left[\frac{L}{T}\right]$

$[M^0L^1T^{-1}]$

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विमा

$F = ma$ (Mass)

त्वरण $a = \frac{v-u}{t}$

चाल m/sec

m/sec ÷ sec = $\frac{m}{sec^2}$

त्वरण $\frac{m}{sec^2} \times \frac{sec}{1}$

बल :- सूत्र $F = ma$

मात्रक: न्यूटन = किग्रा × $\frac{\text{मीटर}}{\text{सैकण्ड}^2}$

विमा: $[M^1]$

$\left[\frac{L^1}{T^2}\right] = [M^1 L^1 T^{-2}]$

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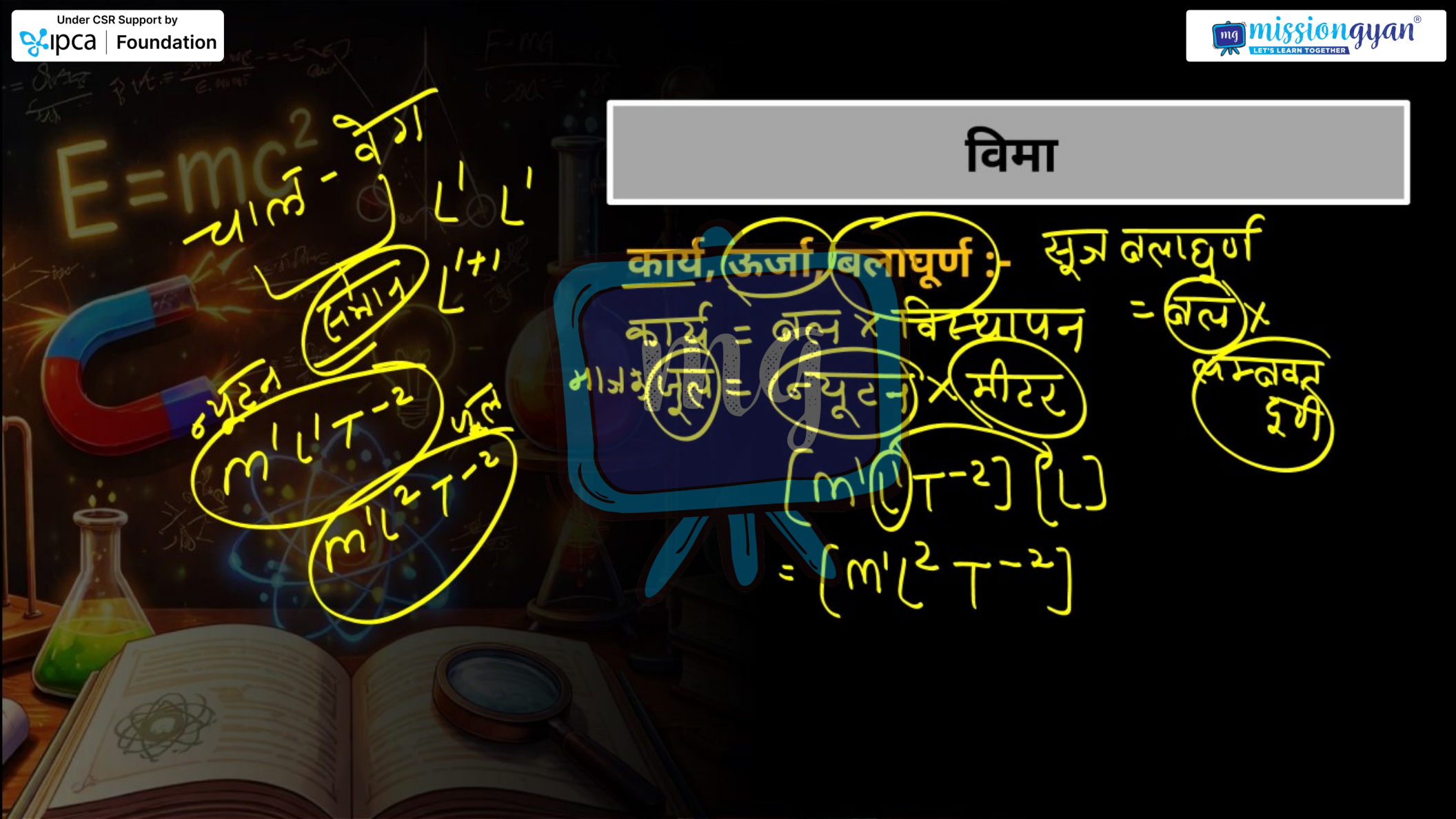

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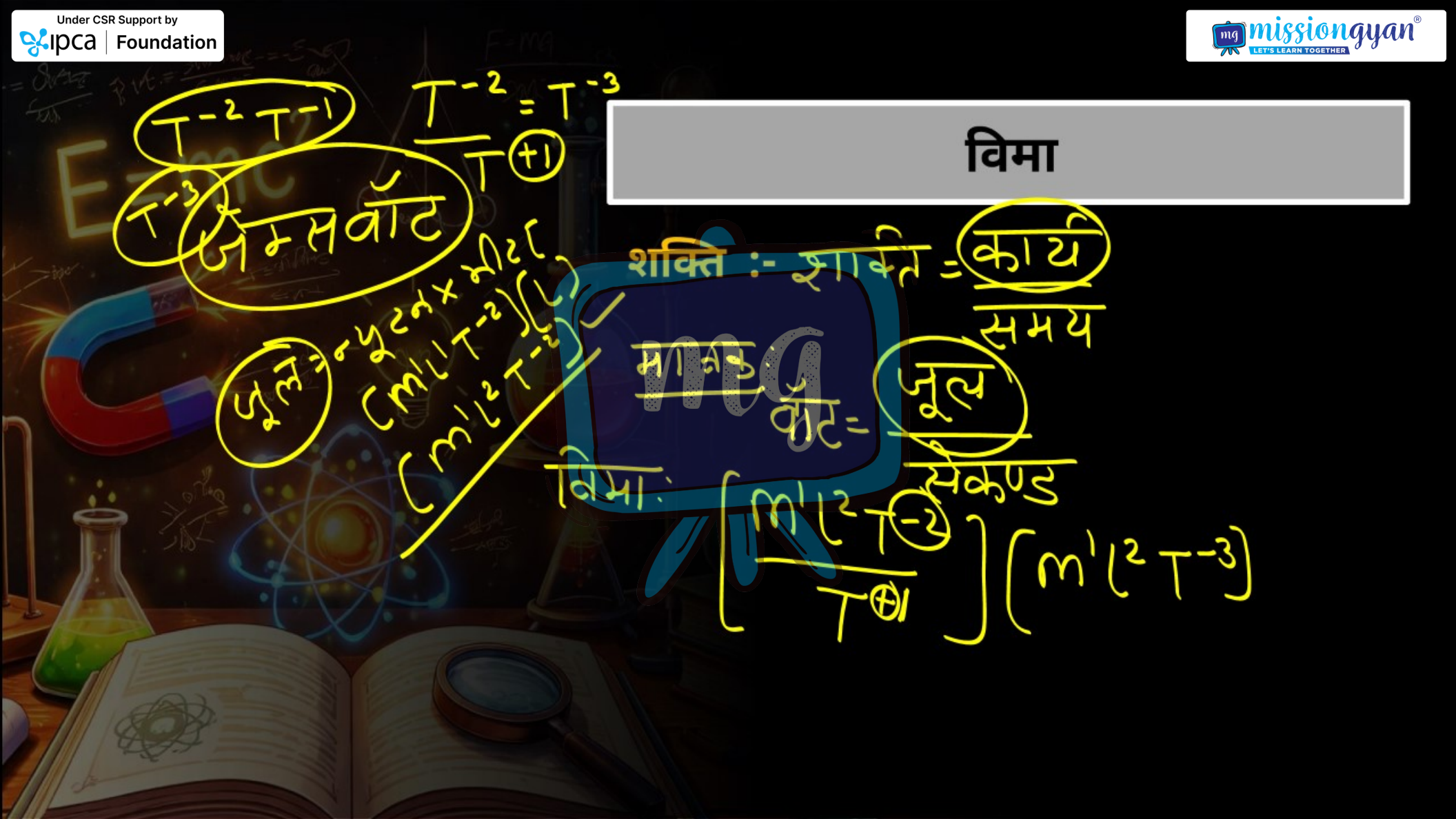

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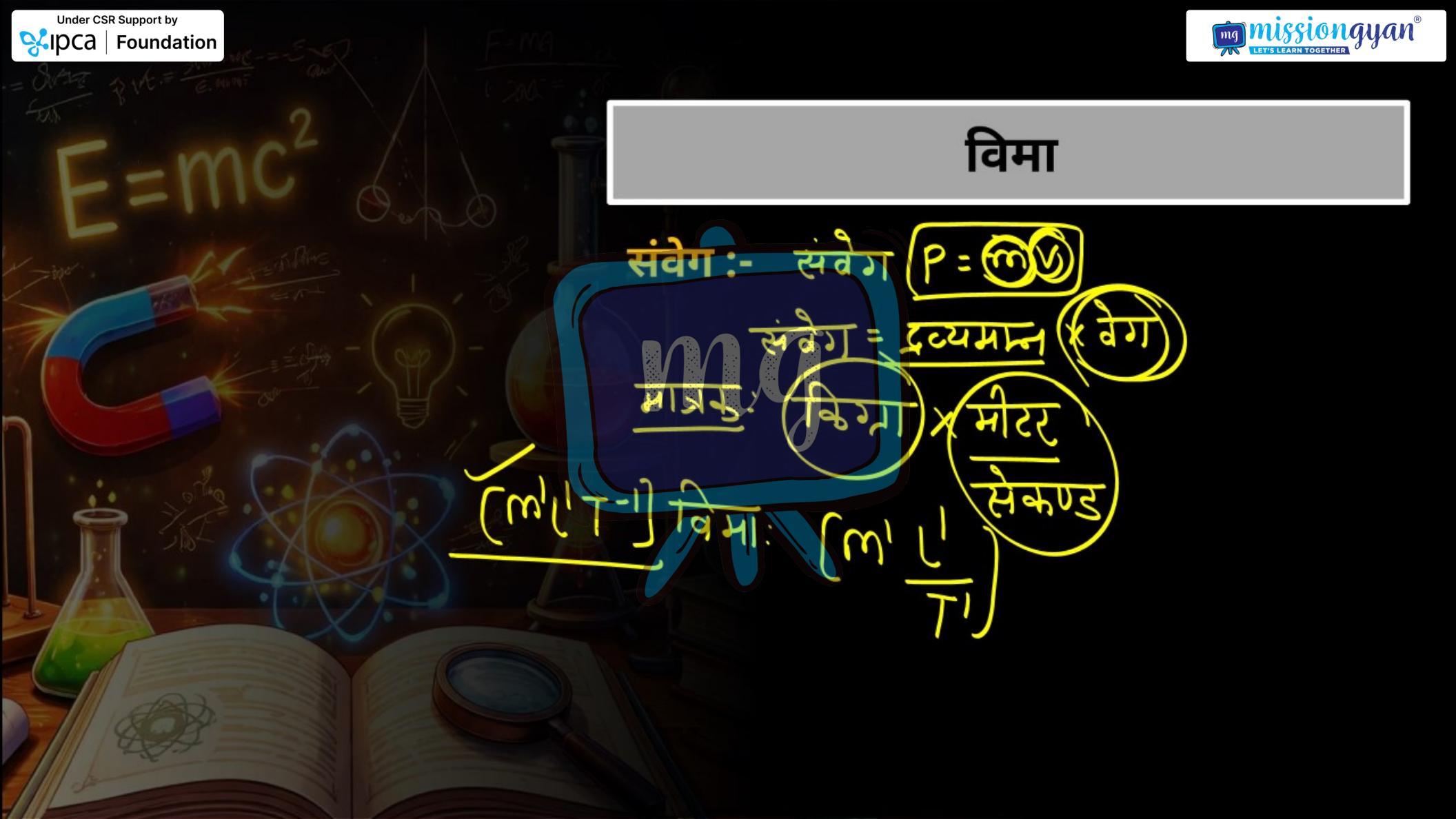

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विमा

$F \propto \frac{1}{t}$

T^{-2} T^{+1}

T^{-2+1}

(T^{-1})

$Ft =$ आवेग

आवेग :- (Impulse)

पूर्ण आवेग = बल × समय

मात्रक N · sec

विमा $[m^1 L^1 T^{-2}][T]$

$(m^1 L^1 T^{-1})$

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विमा

द्रव

पृष्ठ तनाव :- सूत्र $T = \frac{F}{L}$

मात्रक - न्यूटन मीटर

विमा $[M^1 L^0 T^{-2}]$

$\frac{[M^1 L^1 T^{-2}]}{[L]}$

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विमा

दाब, प्रतिबल, प्रत्यास्थता, गुणांक :-

$F = PA$ $F = ma$

यंग, आयतन, दृढता

दाब $P = \frac{F}{A}$

$\frac{\Delta L}{L}$ $\frac{m}{m}$

प्रतिबल $= \frac{F}{A}$

प्रत्यास्थता गुणांक $= \frac{\text{प्रतिबल}}{\text{विकृति}}$

विकृति (strain) $(M^0L^0T^0)$

सूत्र $P = \frac{F}{A}$

मात्रक $\frac{\text{न्यूटन}}{\text{मीटर}^2}$

$(M^1L^{-1}T^{-2})$

विमा: $\frac{(M^1L^1T^{-2})}{(L^2)}$

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विमा

घनत्व :-

सत्र घनत्व = $\frac{\text{द्रव्यमान}}{\text{आयतन}}$

मात्रक: $\frac{Kg}{m^3}$

विमा $\left[\frac{m^1}{L^3}\right]$ $[m^1 L^{-3} T^0]$

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विमा

आवृत्ति :- आवृत्ति = $\frac{1}{\text{आवर्तकाल}}$

मात्रक : हर्ट्ज या $\frac{1}{\text{सैकण्ड}}$

विमा : $\frac{1}{T}$ $[M^0L^0T^{-1}]$

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विमा

