

# **BASIC MECHANICAL ENGINEERING**

## **(FORMULA)**

### **INTRODUCTION**

- $F = ma$  (Newton)
- $P = F/a$  ( $N/m^2$ ) or (Pa)  $\Rightarrow 1 Pa = 1 N/m^2$  and  $1 bar = 10^5 Pa$
- $P_{atm} = 1.01325 bar$
- $P = \rho gh$
- Absolute pressure = Atmospheric Pressure  $\pm$  Gauge Pressure
- Power  $P = W/t$  (J/s) or (Watt)
- Potential Energy P.E. =  $wh$  (Nm)  
 $= mgh$  where,  $g = 9.81 m/s^2$
- Kinetic Energy K.E. =  $(mv^2)/2$  (Nm)
- Specific Heat Capacity
  - $Q = mC\Delta T$  or
  - $Q = W + U$  (kJ/kg K)
  - $C = Q/(m \Delta T)$
- Enthalpy  $H = U + pV$
- Specific Enthalpy  $h = U + pV$
- Friction Power F.P. = I.P. - B.P.
- Mechanical Efficiency ( $\eta_m$ ) = B.P. / I.P.
- Thermal Efficiency ( $\eta_{th}$ )
  - $\eta_{th} = (\text{output of engine}) / (\text{Heat input from the fuel})$

# Basic Mechanical Engineering Formulas Pocket Guide

**Bonnie A. Osif**



## **Basic Mechanical Engineering Formulas Pocket Guide:**

**Mechanical Engineering Formulas Pocket Guide** Tyler G. Hicks, 2003-02-19 THOUSANDS OF MECHANICAL ENGINEERING FORMULAS IN YOUR POCKET AND AT YOUR FINGERTIPS This portable find it now reference contains thousands of indispensable formulas mechanical engineers need for day to day practice It's all here in one compact resource everything from HVAC to stress and vibration equations measuring fatigue bearings gear design simple mechanics and more Compiled by a professional engineer with many years experience the Pocket Guide includes common conversions symbols and vital calculations data You'll find just what you need to solve your problems quickly easily and accurately Using the Engineering Literature Bonnie A. Osif, 2006-08-23 The field of engineering is becoming increasingly interdisciplinary and there is an ever growing need for engineers to investigate engineering and scientific resources outside their own area of expertise However studies have shown that quality information finding skills often tend to be lacking in the engineering profession Using the Engineerin *Using the Engineering Literature, Second Edition* Bonnie A. Osif, 2011-08-09 With the encroachment of the Internet into nearly all aspects of work and life it seems as though information is everywhere However there is information and then there is correct appropriate and timely information While we might love being able to turn to Wikipedia for encyclopedia like information or search Google for the thousands of links on a topic engineers need the best information information that is evaluated up to date and complete Accurate vetted information is necessary when building new skyscrapers or developing new prosthetics for returning military veterans While the award winning first edition of Using the Engineering Literature used a roadmap analogy we now need a three dimensional analysis reflecting the complex and dynamic nature of research in the information age Using the Engineering Literature Second Edition provides a guide to the wide range of resources available in all fields of engineering This second edition has been thoroughly revised and features new sections on nanotechnology as well as green engineering The information age has greatly impacted the way engineers find information Engineers have an effect directly and indirectly on almost all aspects of our lives and it is vital that they find the right information at the right time to create better products and processes Comprehensive and up to date with expert chapter authors this book fills a gap in the literature providing critical information in a user friendly format Mechanical Engineering Navy Feroz, 2019-10-17 A handbook of Mechanical Engineering For Formulas Mechanical Engineering Formulas all subjects formulas with concepts and course outlines are given here Select your desired course and you can revise all the Formulas within an hour only When you are a mechanical engineer you need to know the important formulas during the competitive exams like GATE ESE and other exams to solve the answers easily using the formula So you must know the all important formulas in the mechanical engineering Subjects This book is specially prepared for mechanical engineers Topics Inside Book SI multiples Basic units distance area volume mass density Thermodynamics Thermal engineering Heat transfer Fluid mechanics Strength of materials Theory of machines Machine design Manufacturing Industrial engineering Get the free

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