Electrical equations sheet

Electrical equations cheat sheet.

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This sheet of particular electric formulas will assist you to get a quick response to the quantities related to the following topics: 1 â¨¬ “Basic concepts of electricity 2 â¨" Electrical quantities and components 3 â¨" The law of Ohm 4 â¨" Circuits Series 5 â¨" Parallel Circuits 6 â¨¬ “Serial-Parallel Circuits 7 â¨" Basic Network Theories 8 – Teletics of Network Analysis 9 â¨¬ “Magnetism and Electromagnetism 10 â¨" Measuring Instruments 11 â¨ â¨ “Basic Quantities AC Quantities 12 â¨" Oscilloscope 13 Ã¢ â¨" Inductance 14 Ã¢ â¨" Inductive Reactance in AC 15 Ã¢ â¨"RL Circuits in AC 16 Ã¢ â¨" Basic transformer characteristics 17 Ã¢ â¨" Capacity 18 Ã¨ “Capacitive Reactance in AC 19 Ã¢ â RC Circuits in AC 20 â¨" Analysis of the RLC Circuit 21 â¨" Series and parallel resonance 22 â¨ “Semiconductor materials and junctions PN 23 â¨" Diodes and diode circuits 24 â¨" Power circuits 25 â¨ “Bipolar junction transistors 26 â¨" Transistor Prevention Circuits of Transistors 27 â¨" Transist os field effect and circuits 28 â¨" Operating amplifiers 29 â¨" Oscillators and multivibrators 30 â¨" Thyristor 31 â¨" Opto Electronicsall you have to do is go to the following link, download the Excel sheet, connect the parameters and get the response .excel sheet for electric formulas can you find APK for Android? You can find new free Android games and apps. Calculator Calculator Calculator Horsepower Torque Calculator (HP) Horsepower (HP) A Torque Equivalent Resistance – Series and Parallel Circuit Calculator Equivalent Capacity – Series and Parallel Circuit Equivalent Inductance Calculator – Series and Parallel Circuit Equivalent Impedance Calculator – RLC Series Circy Calculator Equivalent Impedence – Equivalent impedance Rlc parallel parallel parallel parallel parallel co-axial cable condensable parallel cavacitanza cavitanza cavitanza cavitanza cavitanza condensable cable capacitor calculator calculator calculator calculator calculator calculator calculator calculator calculator 3 phase AC Start-up and operation Calculator Calculator Calculator Induction AC Calculator Calculator Motor Speed Calculator Charge and Energy of the Condenser Calculator Calculator Calculator Today the Electrical Engineering XYZ shares the free formula sheet on the concepts of Basic electrical engineering and topics. The Formula Plate contains different formulas on 13 DC and AC themes and is important for all engineering students who are doing their engineering, and for those who are appearing in various competitive tests. While these formulas are basic concepts, everyone in the electric field should remember them. Keeping in mind your ease, these formulas are in PDF format so you can download and keep them with you also for future reference. List of formulas: Series resistors: You can use this formula to solve two or more resistors in the series configuration. Parallel resistors: use this formula to solve two or more resistors in parallel. Kirchhoff's current law: to calculate current A knot. The Kirchhoff voltage law: to calculate the voltage in a loop. Inductive reaction: find the reactivity of the inductor at a specific frequency. Capacitive reaction: find the condenser reactivity at the specific frequency. The OHM law for AC circuits: it relaxes the current, voltage and impedance in alternating current circuits. Serial impedance: to resolve two or more standard impedances. Parallel impedance: solve two or more impedances in parallel. Decibel formulas: 6 formulas on decibel. Active power: calculates the active power that is measured in watts. Reactive power: To calculate the reactive power measured in VAR. Apparent power: To calculate the apparent power measured in Volt-Amperes. Furthermore, download our free DC electric engineering manual in which we shared the basic theory of these circuits. Download below are the formulas and equations of electrical engineering for the basic quantities, such as current, voltage, power, resistance and impedance in the DC and AC circuits (single phase and three phases). Electric current formulas The current formulas in DCelectric circuit Current formula in single phase AC circuits = P / (v x soî¸) i = (v / z) electric current formula in three phases ac circuitovoltage or potential electrical formulas or voltage electrical formula in Circuits DCV = I X RV = P / IV = ÂŠ (P X R) Electric potential formula in Single-phase AC Circuitsv = P / IV VL = VPH ... [Delta Connection] Power Formula PowerFormula Power in Circuits DCP = V x ip = i2 x rp = v2 / rpower formulas in single-phase AC circuititsp = v x i cosî¸p = i2 x ros so ¸p = (v2 / r) cosî¸power formula in three phases ac circuititsp = Âš3 X VL X The Cosî¸p = 3 x VPICAL IP Electric resistance and impedance Formulas in Circuits DC Electrical resistance and impedance Formula in AC circuits in AC circuits (capacitive or inductive load), Resistance = Impedance ie r = zz2 = R2 + x2 ... in case of resistance and reactivity z = ÂŠ (R2 + XL2) ... in case of inductive load = ÂŠ (R2 + XC2) ... in case of charging o capacity = âš (R2 + (XLâ € "XC) 2 ... In case of inductive and capacitive loads. The impedance is the resistance of the AC circuits, namely resistive circuit, prisoner and inductive (already mentioned above). Where â € œzâ € is the impedance in ohms, â € œrâ € is the resistance in ohms and â € œxâ € is reagents in ohms. Good to know: i = current in amperes (a) v = voltage volts (v) p = power in watts (w) r = resistance in ohm (î ©) z = impedance = resistance of ac circuits in ohmscosî¸ = factor of power = phase difference between voltage and current in the ACVPH circuits = phaseVL phase = voltageOlso line, XL = reactivity indicativoXL = 2ï € = 2ï € = ... where l = inductance in henryand; XC = capacitive reaction = 1/2 € FC ... where C = Capacity Ï ‰ = 2ï € f [/ box] The following table shows the equations and formulas of current, voltage, power and resistance in the DC and 1-Î| & 3-Î| AC circuits. QUANTITY DCSINGLE ï ‡ ï ‡ ï ï ï ï ï ï ï ï ï ï ï ï ï ï ï ï ï ï ‡ Ï ‡ ‡ ï ï ï ï ï ï ï ï ï ï ï ï ï ï ï ï ï ‡ ‡ ï ‡ Inverse) of resistance. The conductance unit is Siemen or MHO and represented by the symbol of â € œgâ € or â € œâ € §â €. Capacity: c = q / vdove â € œcâ € is capacity in farads, â € œqâ € is charged in coulombs, and â € œvâ € is voltage in volts. The capacity unit is farad â € œfâ € or microfarad â € œî¼fâ €. Inductance: vl = -l (di / dt) where â € œlâ € is inductance in enrico, â € œvlâ € is the instant tension through the inductor in volts and â € œdo / dtâ € It is the rate of changes in the current amperes per second. The inductance unit â € œlâ € is Enrico â € œhâ €. It is also known as the Ohm law for inductance. Upload: q = c x vdove â € œqâ € is charging in coulombs, â € œcâ € is the capacity in farads and â € â € œvâ € is voltage in volts. Frequency: f = 1 / ttime periodt = 1 / fwhere â € œfâ € is the frequency in Hertz (Hz) and â € œTâ € is periods of time in seconds. Related places: The common electrical units used in the formulas and equations are: Volt - Electric potential unit or motive force - the potential is required to send a current amp through an OHM resistance ohm - resistance unit - an ohm is The resistance offered to the passage of a ampero when it is unemployed by a volt ampere - current unit - a amp is the current that a volt can send through a resistance of an Ohm Watt - electricity or power unit - a watt It is the product of a ampere and a volt - a current amp that flows under the strength of a volt (2C) Electric resistance - OHM's Law R = U / I (3a) R = U2 / P (3b) R = P / i2 (3C) Example - OHM Law at 12 volt battery Power a resistance of 18 ohms. I = (12 v) / (18 ©) = 0.67 (a) Download the Ohm law as PDF-File Electric Power P = UI (4A) P = R I2 (4B) P = U2 / R (4C) where p = power (watt, w, j / s) u = voltage (volt, v) i = current (ampere, a) r = resistance (ohms, î ©) example - the energy lost in a resistant battery to 12 V is connected in series with a resistance of 50 ohms. The power consumed in the resistance can be calculated as p = (12 v) 2 / (50 ohm) = 2.9 w the energy dissipated in 60 seconds can be calculated w = (2.9 w) (60 s) = 174 ws, j = 0,174 kWh = 4.8 10-5 kWh Example - Electric stove an electric stove consumes 5 MJ of energy from a 230 V power supply when turned on in 60 minutes. The degree of power - energy for time unit - of the stove can be calculated as p = (5 mj) (106 j / mj) / (60 min) (60 s / min) = 1389 w = 1.39 kw the current can be calculated i = (1389 w) / (230 v) = 6 amp electric motors electric efficiency Î¼ = 746 PHP / PINPUT_W (6) where Î¼ = efficiency PHP = output power (HP) PINPUT_W = input electrical power (Watt) or alternatively Î¼ = 746 PHP / (1.732 VI PF) (6b) Electric motor - P3-phase power = (UI PF 1.732) / 1,000 (7) where P3-phase = three-phase electric motor (kW) PF = electric motor factor power electric motor - I3-phase amp = (746 PHP) / (1.732 V Î¼ PF) (8) where i3-phase = 3-phase current electric motor (AMPS) PF = electric motor engine factor