P 2 2 0 pulling in the pulling integer chapter 3: 9 Simple Resistive circuits 2 0 Q Resistors in series 9 9 Series connected resistors carry the Q RI Q Ve=10 same current. R2 0 R3 using KVL 3 Ry -Vs + RIT + R2T + R3I + RmT = 0 2 VS EFFERey 3 $V_5 = (R_1 + R_2 + \dots + R_m) T$ \$ 2920) $\Gamma = Vs$ Req VS = Reg I Reg = E Ri -9 T C Ri-Ro=Ra = --- Rm Resistors in purallel 7 -Iz TI parallel connected resistors 3 Re 3 have the same voltage across their terminal. -0 7 Number of nodes = 2 Based on KCL Ra Rm EI = 0 pos condeulinisally as injuit 9 $I = I_1 + I_2 + I_3 + I_4$ 9 $I_{++}I_{2}+I_{2}+I_{4}-I=0$ 9 3 Scanned with

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-E e 6 R, $I_1 + T_2 + I_3 + I_4 - I_{=0}$ 15 e V3 + V5 + R1 R2 + + VS Rm = IT E F €, R I = Vs Reg +Vs R3 Vs R₁ Req e: Re e 2 Vs [14000 Rz 2 R:3 Reg = 6 $\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_1}$ R e 2 Cases : Q 1 IF M=2 Q $PReg = R_1R_2$ $R_1 + R_2$ 1 -Reg Ę R R1 Q C 2. IF $R_1 = R_2 = R_3$ - Rm C $\frac{1}{R} = \frac{M}{R}$ Reg R R Ę <u> قسمة وحرة منظم الم</u> Req Rm -84 = 21 5 Rxu = 81 E 11 E E E 5 5 Scanned with

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<u>n n n n n n n n n n n n n n n</u> 7.21 61 ۲ Exô GOVA 641 IOU 300 0P 1.25 ASTIT y 1-11 chivic tash 1. calculate Rxy ((6+10)//64) = 2.8 GOV A 12N (20//30)=12 y Rxy = 129 calculate I 2 60 = - 5A V=RT 12 R, $R_1T + R_2$ Voltage Divider = 0 Vs=104 R2 + R2) - Vs isos zosiger Vs ع) **الد**والح $R_1 + R_2$ R. $v = R_1 T$ = $R_1 + R_2$ 1. Reg. = R. + R. 3 2. Is = VsReq. З. Rz Vi=RIIS - R1 R-V Vs -Ri+R2 $R_1 + R_2$ $V_2 = R_2 I_s$ 1002 4-1 Current Divider -7 Ir TI $V = R_1 I_1 = R_2 I_2 = (R_1 / R_2) I_1$ Is=2A (1 1 R2 Rı IIIs Rey Ri T السار المكلى الداخل المتقري Is Req R2 R2+R1 -1 RIR2 RITRI R2 Т Rea _ R1 is R1+R2 RitRz 12 = 2 2 Scanned with

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IU I Find Io, Vo Ti 112 362 \$ 101 140 using_voltage 242 T= = #A @ current divider. 44-1 30 Req = Gil V=6.8 = 48V V=RT $T_{1} = 0.6 A$ $48 = I_{1.80}$ $I_0 = 2A$ 10 48 = 2410 $I_{3} = 0.69$ $48 = I_{3},80$ Vo = 18 J $V_0 = I_2, 30$ nobivi To IMA To 12K MMA SIZK 4K ٩K 12K A 18K In T, current 41 -1-2 = ImA+ del Reg القلومات جاعد اله 12 find Io ? P.eq. -9 V= To R $\overline{J}_{1} = -\overline{J}_{0}$ - 2T S 2V $V_1 - V_2 = 0$ V = 21/ $12 K T_1 - 4 K T_2 = 0$ Ex 500 Excort 50 L V1=22 11601 Kol (I 100U 2000 200 للقاومة لأكر ستوحذ لحصر الأكس Reg = 15 $V_1 = [-$ 50 100+50 = Vs = 100 150 33.22 V RITES Scanned with

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3 3 Y-D Transformation 3 Re $Rab = R_1 + R_2 = (R_0 + R_b) / R_x$ a Ь 7 $R_{bc} = R_2 + R_3 = (R_c + R_b) // R_a$ R2 R, Rb وردف برالالآق 7 R1 Pa 7 $R_{ca} = R_1 + R_3 = (R_{c+}R_a) // R_b$ R, الله cهنتوج R3 فتصعمتنا R, Rz, Rz are given $R_{c} = R_{I}R_{2} + R_{1}R_{3} + R_{2}R_{3}$ $R_1R_2 + R_1R_3 + R_2R_3$ R_3 Ri __ Rausonau' $R_{b=} R_1 R_2 + R_1 R_3 + R_2 R_3$ 22 R2 VOF Δ Ra, Rb, Rc are given = RbRc RI - Cluber Vedala Ra+Rb+Rc اللحجبرك R2 = RaRc Ra+Rb+Rc R3 = RaRb Ra+Rb+Rc

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6J colculate I? Ex 125J 100 YOV G 29 ىقىرى على توانى you أوتوالي اطانعل دلتا مثلث فوقة أو دلتا مثلث تحت عاطهمة لت Req > MOV i portili 51 125 J 100 R1 100×125 401 125+125 25 37.5 $R_2 = \frac{125 \times 25}{250}$ ستحرل شكلها 12.50 51 $R_3 = \frac{100 \times 25}{250} = 100$ 501 YOV (F 12.51 2 1. 37.5 مرت بقد راطها Re Na توالى وتوارث (12.5+37.5) // (10+40) + 50+5 Req = 25+55 = 80 $I = \frac{V}{R} = \frac{40}{80} = 0.5 A$

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Extra on voltage of current divider 31 41 بي الم نف القولس × 120 = EX = 120 Vr- (18/19 61 (18/19) + 4İx YOKA find Vo? Exő 60 Ku 0.9mh 80KU rit Vo = (80K) (ix) ourrenties = (80K) (60K 0.9 mA الدك OK + 140+SOK =24V Ix чA Ex : 154 0.9ix 6A

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