Answers of Assignment 1,2 and 6

Q. No.	Answers (Assignment-1)
8	a. Ix=4 A, Iy= 2 A, Iz= 0. b. Ix=2 A, Iy= 0, Iz= 0. c. Ix=Iy= Iz= 2 A.
14	a. Ix=5 A: V1= 25 V, Iy= 2.5 A b. V1= 3 V: Ix=0.6 A, Iy= 0.3 A c. None
16	a. 0.125 A b. -1 A
22	P(20V)= - 80 W, P(1.5 Ohm)=24 W, P(14Ohm)= 14 W, P(2 Ohm)= 18 W, P(4 Ohm)= 16 W, P(2.5 Ohm)= 2.5 W, P(i_s)= 5.5 W
23	a. V14=0: V13= 8 V, V23= -4 V, and V24= -12 V. b. V14=6 V: V13= 14 V, V23= 2 V and V24=-6 V c. V14=- 6 V: V13= 2V, V23=- 10 V, V24= -18 V
28	a. i= 4A: R= 0.57 Ohm b. i= 2.38 A: R= 1 Ohm (Aprox.) c. i=100/7 A: R= 0.12 Ohms (Aprox)
37	P(6 Ohm)= 150 W, P(4 Ohm)= 225 W, P(12 Ohm)= 75 W, P(8A)= -240 W, P(7 A)= -210 W

Q.	Answer of Assignment-2
6.	V1= 18/7 V, i1=0
8.	Vx= - 150.48 V
11.	V2= -28 V
13.	Vx= - 8.08 V (Approx)
31	ix= (120/43) A
34.	Ix= (25/3) A
36.	Vx= 4/3 V or I_1(1 Ohm)= 4/3 A, I_2 (bottom right mesh)=0.073 A
43.	3.65 W (absorbed by 2.2 V source)
50.	a. A: short ckt, v3= 69 V (approx). b. A: 9 V source, v3=67.6 V c. A: 5i dependent current source, v3=189 V

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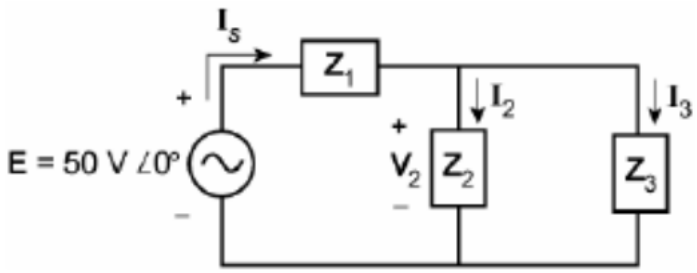
Q. Section A	Answers of Assignment-6
Q. 1	Answers given with Assignment Problems
2	Z_T=5 Ohm Angle 53.13 degrees, I = 1oA Angle (-53.13 degrees), For R: Real Power P= 300 W, Q= 0 VAR, S= 300 VA For L: P= 0 W, Q= 900 VAR (L) or + 500 VAR, S= 900 VA For C: P= 0 W, Q= 500 VAR (C) or -500 VAR, S= 500 VA Total P= 300 W, Q= 400 VAR(L), S_T= 500 VA, Power Factor= 0.6 lagging.
3	a. I(R)= 3A Angle 30 degrees, P= 180 W, Q(R)= 0 VAR, S= 180 VA
	b. I(L)= 6 A Angle -60 degrees, P(L)=0 W, Q= 360 VAR(L), S= 360 VA
	c. Total P= 580 W, Q= 960 VAR(L), S= 1121.61 VA, Fp= 0.517 lagging with circuit phase angle 58.87 degrees., d. Current Is= 18.69 A with Angle -28.87 degrees.
4	
	Z_1: $P = 0$ W, $Q_L = I_s^2 X_L = (1.78\text{ A})^2\ 40\ \Omega = 126.74$ VAR(L), $S = 126.74$ VA Z_2: $P = 0$ W, $Q_C = I_2^2 X_C = (1.37\text{ A})^2\ 25\ \Omega = 46.92$ VAR(C), $S = 46.92$ VA Z_3: $P = I_3^2 R = (1.14\text{ A})^2\ 30\ \Omega = 38.99$ W, $Q_R = 0$ VAR, $S = 38.99$ VA
	$P_T = 0 + 0 + 38.99\text{ W} = 38.99$ W $Q_T = +126.74\text{ VAR}(L) - 46.92\text{ VAR}(C) + 0 = 79.82$ VAR(L) $S_T = \sqrt{P_T^2 + Q_T^2} = 88.83$ VA $F_p = \frac{P_T}{S_T} = \frac{38.99\text{ W}}{88.83\text{ VA}} = 0.439$ (lagging)