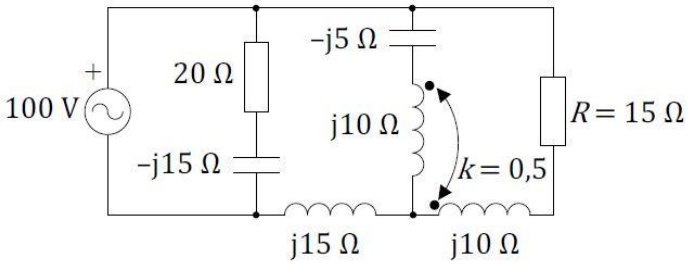
LJR 14-15

13. Izračunajte snagu na otporniku ***R*** u spoju prema slici.
***3** boda*

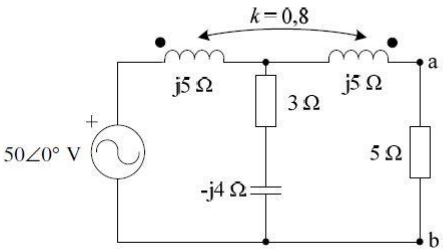
A) 30 W
B) 60 W
C) 90 W
D) 120 W
E) 150 W



ZR 13-14

11. Odredite $\dot{U}_{ab}$ u krugu prema slici.
***3** boda*

A) $\dot{U}_{ab} = 31\angle{-60°}$ V
B) $\dot{U}_{ab} = 31\angle{-38°}$ V
C) $\dot{U}_{ab} = 42{,}1\angle{-38°}$ V
D) $\dot{U}_{ab} = 42{,}1\angle{-60°}$ V
E) $\dot{U}_{ab} = 55{,}5\angle{-67°}$ V



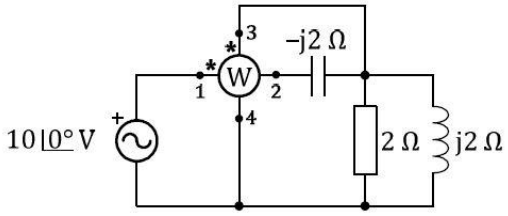
ZR 13-14

2. (2b) Serijski su spojeni otpornik $R = 5\Omega$ i kapacitet $X_C = 15\Omega$. Ako je napon na otporniku jednak $U_R = 31.623$V, odredite radnu i jalovu snagu spoja.
A) $P = 200$ W, $Q = -600$ VAr B) $P = 200$ W, $Q = 600$ VAr C) $P = 600$ W, $Q = -200$ VAr
D) $P = 600$ W, $Q = 200$ VAr E) $P = 0$ W, $Q = 0$ VAr

ZR 14-15

10. Odredite koliku snagu pokazuje vatmetar (strujne stezaljke 1 i 2, naponske stezaljke 3 i 4) u mreži prema slici.
***3** boda*

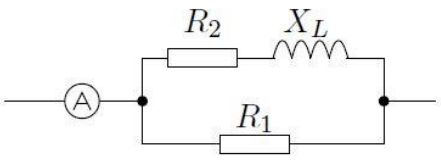
A) 12,5 W
B) 25 W
C) 32,5 W
D) 45 W
E) 50 W



ZI 14-15

6. (3b) Odredite pokazivanje ampermetra u mreži prema slici ako je ukupna radna snaga u krugu jednaka $P_{uk} = 1100\text{W}$, te $R_1 = 10\Omega$, $R_2 = 6\Omega$ i $X_L = 8\Omega$.

A) $I_A = 14.03\,\text{A}$
B) $I_A = 14.83\,\text{A}$
C) $I_A = 19.24\,\text{A}$
D) $I_A = 20.98\,\text{A}$
E) $I_A = 25.69\,\text{A}$



ZI 14-15

8. *3 boda* Induktivnom trošilu, koje je priključeno na gradsku mrežu efektivne vrijednosti napona 220 V i frekvencije 50 Hz i koje razvija snagu od 240 W paralelno je spojen kondenzator kapaciteta 150 μF. Ukupan faktor snage za cijelu kombinaciju iznosi 0,8 (induktivno). Koliki je bio faktor snage trošila prije spajanja kondenzatora?

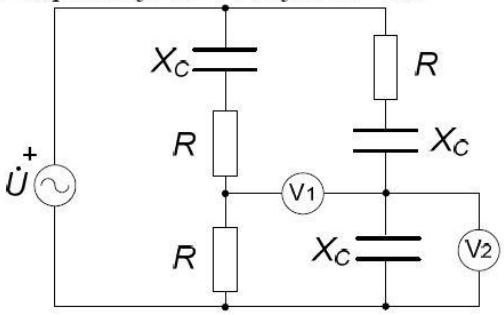
A) cosφ = 0,5 B) cosφ = 0,33 C) cosφ = 0,25 D) cosφ = 0,1 E) cosφ = 0

LJR 13-14

17. Odredite pokazivanje voltmetra V_1, ako voltmetar V_2 pokazuje 10 V i vrijedi $R = X_C$.

3 boda

A) 4,4 V
B) 8,9 V
C) 13,4 V
D) 17,9 V
E) 22,4 V

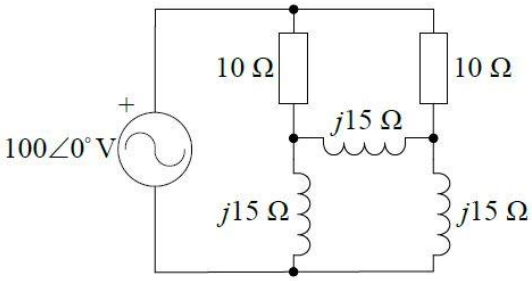


ZI 12-13

5. Odrediti struju izvora u mreži prema slici.

3 boda

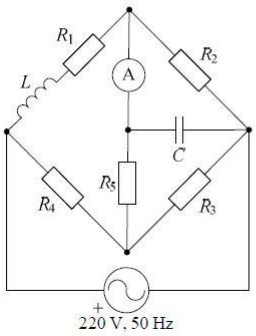
A) $I = 12,5$ A
B) $I = 11,1$ A
C) $I = 9,7$ A
D) $I = 7,4$ A
E) $I = 6,1$ A



ZI 13-14

9. U spoju prema slici struja kroz ampermetar iznosi $I_A = 0$. Zadano je:
3 boda $R_2 = 1\ \text{k}\Omega$, $R_3 = R_4 = 2\ \text{k}\Omega$, $R_5 = 200\ \Omega$, $C = 1\ \mu\text{F}$. Odredite R_1.

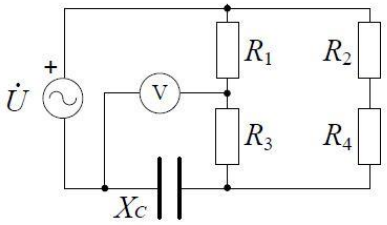
A) $R_1 = 5\ \text{k}\Omega$
B) $R_1 = 4\ \text{k}\Omega$
C) $R_1 = 1\ \text{k}\Omega$
D) $R_1 = 3\ \text{k}\Omega$
E) $R_1 = 2\ \text{k}\Omega$



JR 11-12

17. Koliki iznos napona pokazuje voltmetar u mreži prema slici? Zadano je: $R_1 = 8\ \Omega$, $R_2 = 8\ \Omega$,
3 boda $R_3 = 4\ \Omega$, $R_4 = 16\ \Omega$, $X_C = 8\ \Omega$, $U = 24$ V.

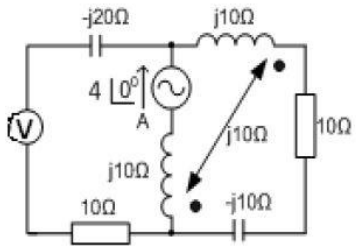
A) 15,8 V
B) 17,9 V
C) 19,9 V
D) 22,0 V
E) 24,0 V



LJR 12-13

15. (3) Koliki napon mjeri idealni voltmetar u mreži prema slici?

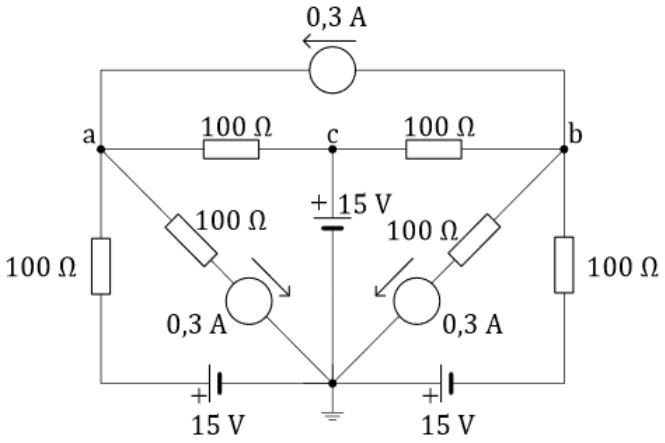
A) 20 V
B) $40\sqrt{2}$ V
C) 30 V
D) 40 V
E) $20\sqrt{2}$ V



LJR 15

16. Odredite napon U_{ab} u mreži prema slici.
***3** boda*

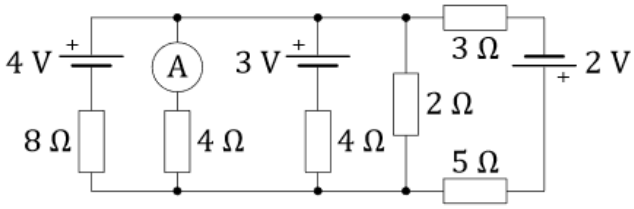
A) 15 V
B) 30 V
C) 45 V
D) 75 V
E) 90 V



JR 15

20. Odredite struju ampermetra u mreži prema slici.
***3** boda*

A) 0,1 A
B) 0,2 A
C) 0,3 A
D) 0,4 A
E) 0,5 A

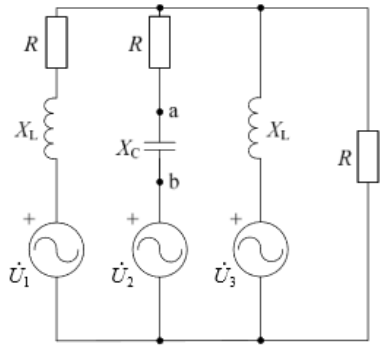


ZI 13-14

10. Odredite $\dot{U}_{ab}$ u spoju prema slici. Zadano je:
***3** boda*

$R = 2\ \Omega$, $X_C = X_L = 2\ \Omega$, $\dot{U}_1 = 10\angle 30°$ V, $\dot{U}_2 = 10\angle 150°$ V, $\dot{U}_3 = 10\angle -90°$ V.

A) $\dot{U}_{ab} = 8{,}2\angle -44°$ V
B) $\dot{U}_{ab} = 4{,}3\angle -72°$ V
C) $\dot{U}_{ab} = 7{,}1\angle -103°$ V
D) $\dot{U}_{ab} = 5{,}1\angle -118°$ V
E) $\dot{U}_{ab} = 6{,}5\angle -91°$ V

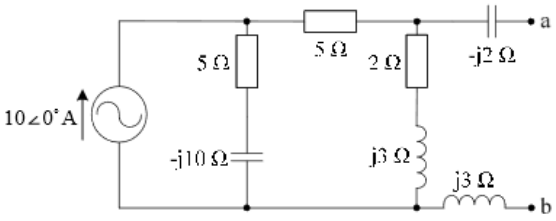


2. MI 13-14

8. Odredite parametre Theveninovog nadomjesnog izvora s priključnica *a* i *b*.

3 boda

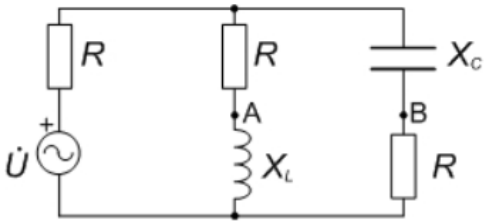
A) $\dot{U}_T = 29{,}0\angle 23^\circ$ V, $\underline{Z}_T = 2{,}4 + j2{,}6\ \Omega$
B) $\dot{U}_T = 11{,}3\angle 5^\circ$ V, $\underline{Z}_T = 2{,}4 + j2{,}6\ \Omega$
C) $\dot{U}_T = 22{,}8\angle 24^\circ$ V, $\underline{Z}_T = 3{,}8 + j3{,}0\ \Omega$
D) $\dot{U}_T = 11{,}3\angle 5^\circ$ V, $\underline{Z}_T = 2{,}7 + j3{,}4\ \Omega$
E) $\dot{U}_T = 29{,}0\angle 23^\circ$ V, $\underline{Z}_T = 2{,}7 + j3{,}4\ \Omega$



2. MI 11-12

6.(3) Ako je zadano $R = X_L = X_C = 10\ \Omega$ i $\dot{U} = 100$ V, odredite **Nortonovu struju $\dot{I}_N$** i **Nortonovu impedanciju $\underline{Z}_N$** između **točaka A i B** u spoju prema slici.

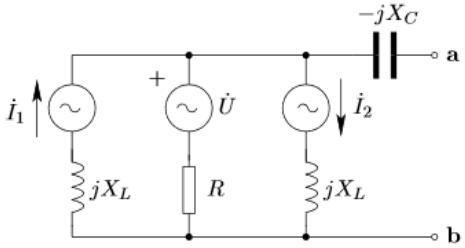
A) $\dot{I}_N = 0$ A, $\underline{Z}_N = 5 + j5\ \Omega$;
B) $\dot{I}_N = 10$ A, $\underline{Z}_N = 10\ \Omega$;
C) $\dot{I}_N = 5$ A, $\underline{Z}_N = 10\ \Omega$;
D) $\dot{I}_N = 0$ A, $\underline{Z}_N = 10\ \Omega$;
E) $\dot{I}_N = 0$ A, $\underline{Z}_N = 5 - j5\ \Omega$.



2. MI 14-15

1. (3b) Odredite elemente nadomjesnog Nortonovog spoja sa priključnica a i b ako je $\dot{U} = 10\angle{+30^0}$ V, $\dot{I}_1 = 1\angle{+45^0}$ A, $\dot{I}_2 = 1\angle{-45^0}$ A i $X_L = X_C = R = 10\,\Omega$.

A) $\underline{Z}_N = 10 - j10\,\Omega$, $\dot{I}_N = -1.707 + j2.707$ A
B) $\underline{Z}_N = 10 - j10\,\Omega$, $\dot{I}_N = -0.524 + j1.390$ A
C) $\underline{Z}_N = 5 - j5\,\Omega$, $\dot{I}_N = -1 + j2$ A
D) $\underline{Z}_N = -6 + j2\,\Omega$, $\dot{I}_N = -2.707 - j1.707$ A
E) $\underline{Z}_N = 10 - j10\,\Omega$, $\dot{I}_N = \infty$ A

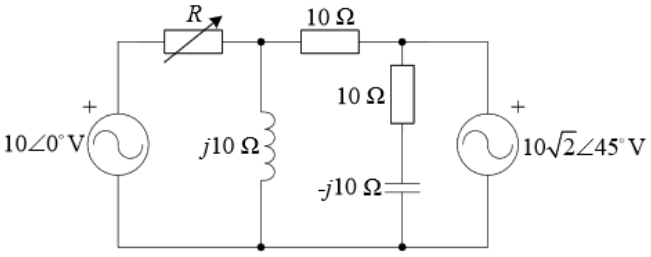


2. MI 12-13

3. Odredite maksimalnu snagu koja se može razvijati na otporu R u mreži prema slici.

3 boda

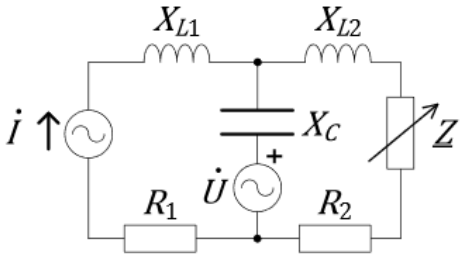
A) $P = 4{,}6$ W
B) $P = 6{,}2$ W
C) $P = 8{,}3$ W
D) $P = 9{,}7$ W
E) $P = 11{,}4$ W



JR 15

16. Kolika se maksimalna radna snaga može razviti na promjenjivoj impedanciji $\underline{Z}$ u krugu
3 boda prema slici? Zadano je: $R_1 = 10\ \Omega$, $R_2 = 5\ \Omega$, $X_{L1} = 12\ \Omega$, $X_{L2} = 15\ \Omega$, $X_C = 10\ \Omega$, $\dot{U} = 10\angle 0°\ \mathrm{V}$, $\dot{I} = 1\angle 0°\ \mathrm{A}$.

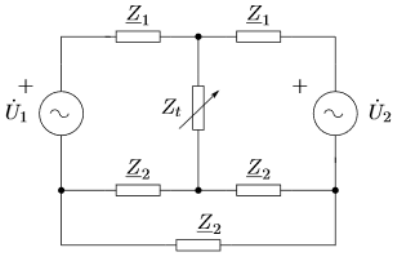
A) 2 W
B) 4 W
C) 6 W
D) 8 W
E) 10 W



2. MI 14-15

10. (3b) Odredite maksimalnu snagu P_{max} koja se može dobiti na promjenjivoj impedanciji $\underline{Z}_t$, ako je $\underline{Z}_1 = 10+\mathrm{j}10\,\Omega$, $\underline{Z}_2 = 30+\mathrm{j}30\,\Omega$, $\dot{U}_1 = 10\,\underline{/0^0}\ \mathrm{V}$ i $\dot{U}_2 = 10\,\underline{/0^0}\ \mathrm{V}$.

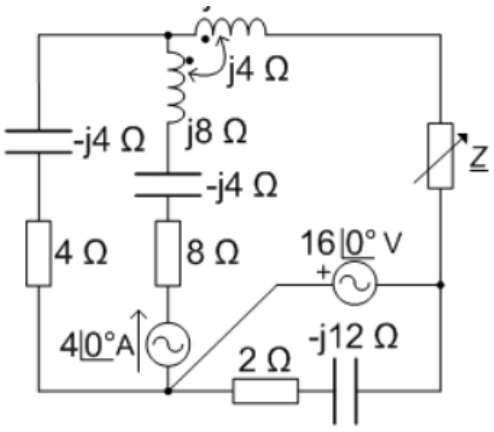
A) $P_{max} = 0\,\mathrm{W}$
B) $P_{max} = 0.75\,\mathrm{W}$
C) $P_{max} = 2.5\,\mathrm{W}$
D) $P_{max} = 1.25\,\mathrm{W}$
E) $P_{max} = 5\,\mathrm{W}$



2. MI 11-12, DR 14-15

5.(3) Odredite **najveću radnu snagu *P*** koja se može razviti na **promjenjivoj impedanciji $\underline{Z}$** u spoju prema slici.

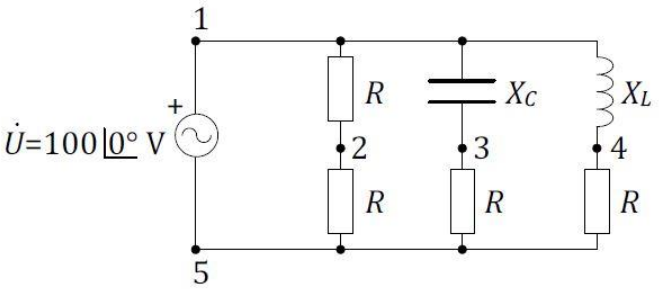
A) 32 W;
B) 64 W;
C) 128 W;
D) 96 W;
E) 16 W.



2. MI 11-12, DR 14-15

11. Ako je $R = X_L = X_C$, fazor napona $\dot{U}_{53}$ u odnosu na fazor napona $\dot{U}_{23}$:
***3** boda*

A) prethodi 45°
B) zaostaje 45°
C) prethodi 90°
D) zaostaje 90°
E) u fazi je



JR 15

17. Odredite pokazivanje voltmetra u mreži prema slici ako je napon izvora $U = 10$ V i vrijedi $R = X_L = \frac{1}{2}X_C$.
***3** boda*

A) 1,6 V
B) 3,7 V
C) 5,8 V
D) 7,9 V
E) 10 V