02.12.2008.

(Ime i prezime) (Matični broj) (Grupa)

2. međuispit iz OE

1. U spoju prema slici $u_1(t)=10\sin(\omega t)\,\mathrm{V}$, $u_2(t)=10\cos(\omega t)\,\mathrm{V}$. Vremenska funkcija napona $u_{ab}(t)$ glasi:

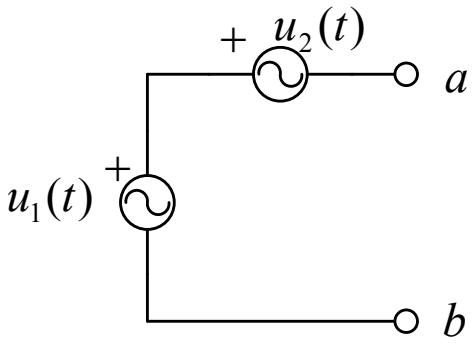
A) 0 V

B) $10\sqrt{2}\cdot\sin\left(\omega t-\frac{\pi}{4}\right)\mathrm{V}$

C) $10\sqrt{2}\cdot\sin\left(\omega t+\frac{\pi}{4}\right)\mathrm{V}$

D) $20\sin(\omega t)\,\mathrm{V}$

E) $20\cos(\omega t)\,\mathrm{V}$



2. Struja je zadana fazorom $\dot{I}=2+j2\,\mathrm{A}$. Kolika je vrijednost vremenske funkcije $i(t)$ u trenutku $t=0\,\mathrm{s}$?

A) 0 A B) 1 A C) 2 A D) 2,82 A E) 4 A

3. Za spoj prema slici impedancija $\underline{Z}_{AB}$ iznosi:

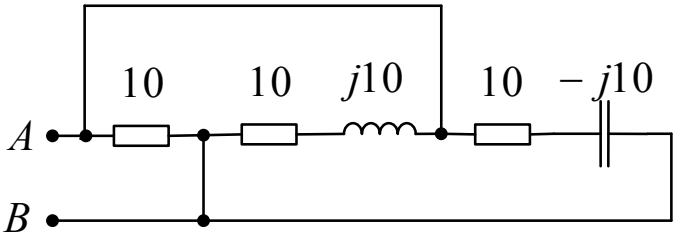
A) $5\,\Omega$

B) $5-j5\,\Omega$

C) $5+j5\,\Omega$

D) $10\,\Omega$

E) $j10\,\Omega$



4. Ako su efektivne vrijednosti struja grana $I_1=1\,\mathrm{A}$, $I_2=8\,\mathrm{A}$, $I_3=3\,\mathrm{A}$, $I_4=5\,\mathrm{A}$, efektivna vrijednost struje strujnoga izvora iznosi:

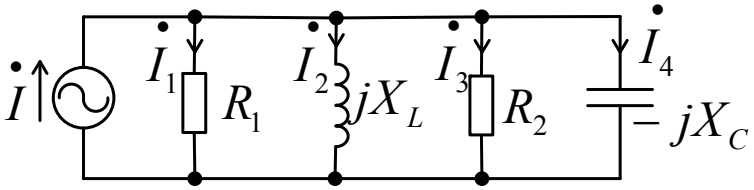
A) 0 A

B) 3 A

C) 5 A

D) 9 A

E) 16 A



5. Odredite rezonantnu kružnu frekvenciju za spoj prema slici:

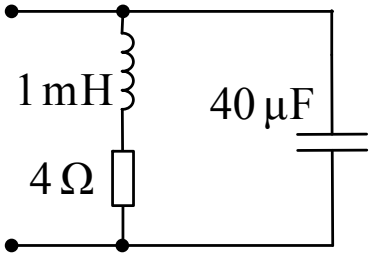
A) $\omega_0=1000\,\mathrm{s}^{-1}$

B) $\omega_0=3000\,\mathrm{s}^{-1}$

C) $\omega_0=5000\,\mathrm{s}^{-1}$

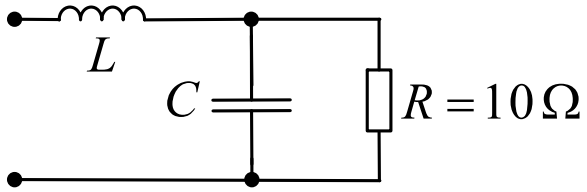
D) $\omega_0=9000\,\mathrm{s}^{-1}$

E) $\omega_0=12000\,\mathrm{s}^{-1}$



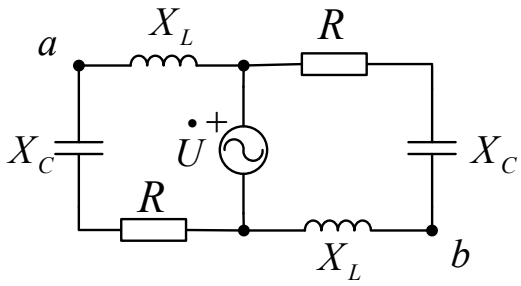
6. Za spoj prema slici impedancija u rezonanciji iznosi $5\,\Omega$. Izračunajte X_L na rezonantnoj frekvenciji.

A) $5\,\Omega$
B) $10\,\Omega$
C) $15\,\Omega$
D) $20\,\Omega$
E) $25\,\Omega$



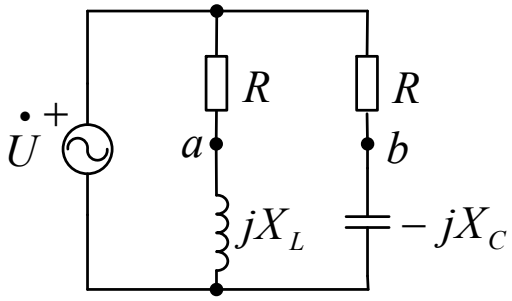
7. Koliki je napon U_{ab} u mreži prema slici? Zadano je: $U = 10\,\text{V}$, $R = X_L = X_C = 10\,\Omega$.

A) 0 V
B) 10 V
C) $10\sqrt{2}$ V
D) $10\sqrt{3}$ V
E) $10\sqrt{5}$ V



8. Odredite napon $\dot{U}_{ab}$ u mreži prema slici. Zadano je: $\dot{U} = 100\angle 0^\circ\,\text{V}$, $R = X_L = X_C = 100\,\Omega$.

A) 0 V
B) $50\angle 90^\circ$ V
C) $50\angle -90^\circ$ V
D) $100\angle 90^\circ$ V
E) $100\angle -90^\circ$ V



9. U paralelnom spoju impedancija $\underline{Z}_1 = 2 - j4$ i $\underline{Z}_2 = 4 + j2$ radna snaga na $\underline{Z}_1$ iznosi 10 W. Kolika je ukupna jalova snaga spoja?

A) -10 VAr B) 10 VAr C) -20 VAr D) 20 VAr E) 30 VAr

10. Izračunajte ukupnu radnu snagu u spoju prema slici. Zadano je: $I = 3\,\text{A}$, $I_1 = 2\,\text{A}$, $I_2 = 2\,\text{A}$, $R_2 = 16\,\Omega$.

A) 2 W
B) 3 W
C) 5 W
D) 6 W
E) 9 W