FCEC003_CSE1_Class Test 2

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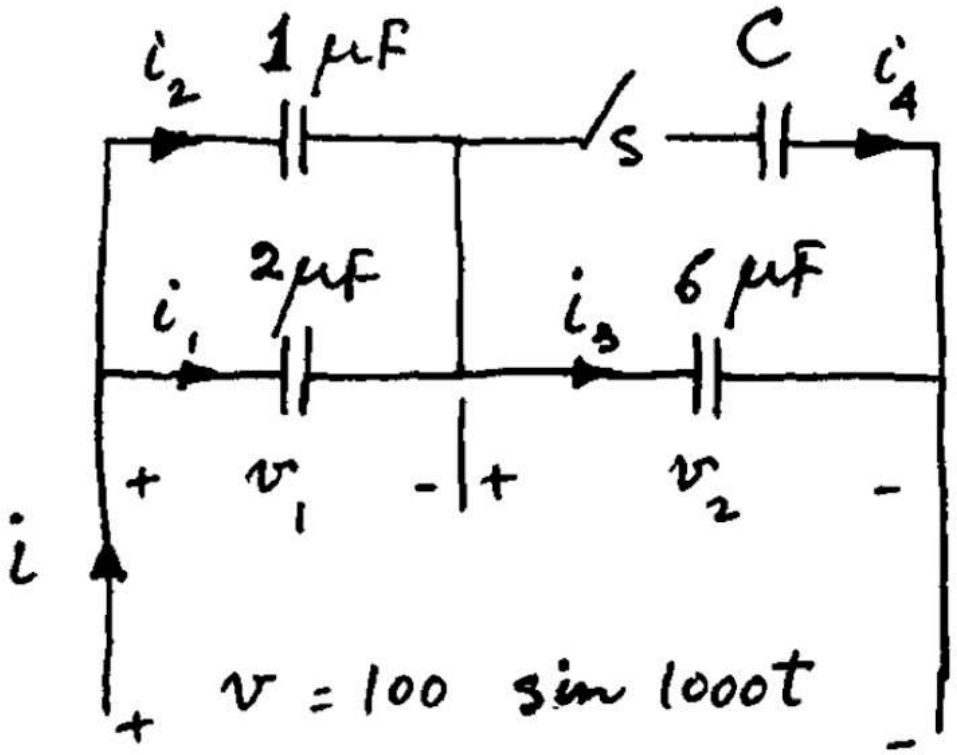
FCEC003_CSE1_Class Test 2 Questions

1. Attempt all questions.
2. NO negative marking.
3. Assume suitable data wherever applicable.
4. NO Quiz response shall be recorded after the stipulated time.
5. Do not refresh webpage and don't use back button during test.
6. Do not open any new tab during test.
7. Only ONE response per student. Once submitted a student can't attend the test again.
8. Click "Back" to go to previous section.

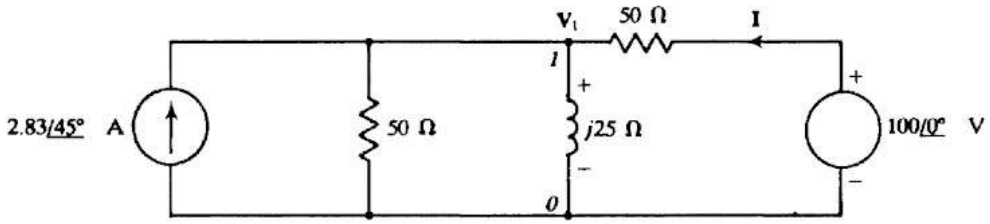
For the circuit shown in fig., determine v1 and v2 (in V) when switch, S is open. 2 points



- v1 = 33.333 sin 1000t, v2 = 66.667 sin 1000t
- v1 = 66.667 sin 1000t, v2 = 33.333 sin 1000t
- v1 = v2 = 50 sin 500t
- v1 = v2 = 50 sin 1000t

Clear selection

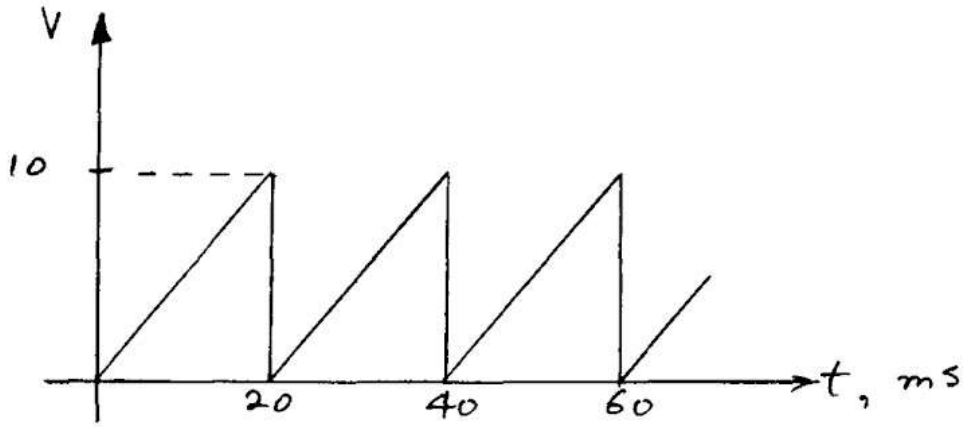
For the circuit shown below., calculate the current (I) supplied by the voltage source. (j = sqrt(-1)) 2 points



- 15 - j15, A
- 3.5 - j3.5, A
- 1.5 - j1.5, A
- 35 - j35, A

Clear selection

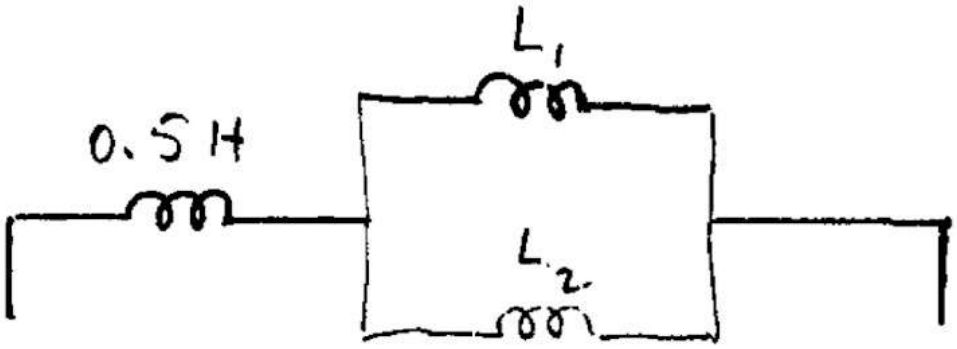
A 30-μF capacitor is charged by a voltage source having sawtooth waveform shown in fig. Determine the charging current. 2 points



- 15 mA
- 10 A
- 15 A
- 20 mA

Clear selection

Given L1 = 2L2, find L1 and L2, respectively, if equivalent inductance is 0.7H. 1 point



- None of the above
- 2H and 1H
- 0.3H and 0.6H
- (●) 0.6H and 0.3H

Clear selection

A current i = 10 cos 377t, A is switched through a 10-μF capacitor at t = 0. Determine the rms voltage across the capacitor and the charge associated with it. 1 point

- 377V and 377 sin10t, C
- 187.6V and 26.525 sin 377t, C
- 265.25 sin 377t and 26.525 sin 377t, mC
- (●) 187.6V and 26.525 sin 377t, mC

Clear selection

A 4ohm resistor in series with a 7.96mH inductor is connected across a 110-V, 60-Hz supply. Determine: (a) impedance,Z (b) supply current,I (c) voltage across resistor, Vr and (d) voltage across inductor, VL. 2 points

- (a) mag(Z) = 5, ang(z) = 36.87deg; (b) mag(I) = 22, ang(I) = -36.87deg; (c) mag(Vr) = 88, ang(Vr) = 0deg; (d) mag(VL) = 66, ang(VL) = 53.13deg
- (a) mag(Z) = 3, ang(z) = -36.87deg; (b) mag(I) = 22, ang(I) = -36.87deg; (c) mag(Vr) = 88, ang(Vr) = 0deg; (d) mag(VL) = 66, ang(VL) = 53.13deg
- (a) mag(Z) = 5, ang(z) = -36.87deg; (b) mag(I) = 22, ang(I) = -36.87deg; (c) mag(Vr) = 88, ang(Vr) = -36.87deg; (d) mag(VL) = 66, ang(VL) = 53.13deg
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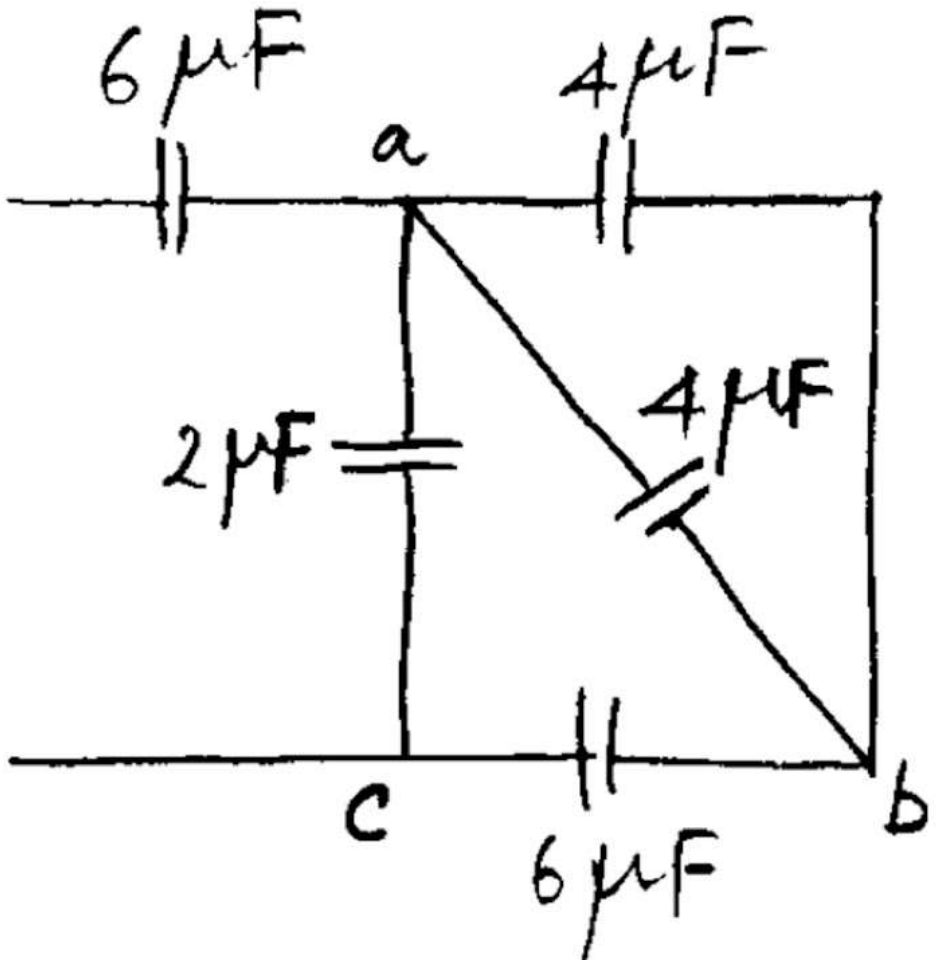
Clear selection

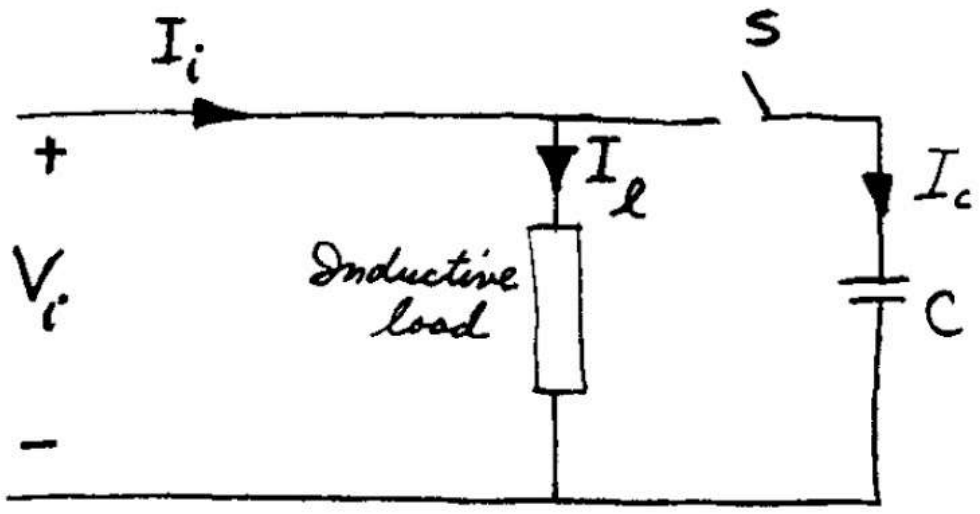
Find the equivalent Capacitance (in micro Farad) of the combination shown in fig. 1 point



- 5.43
- 6
- 2.85
- 10

Clear selection

An inductive load takes 480W of power at 0.8 power factor, while operating at 120V and 60-Hz. It is desired to make power factor of input current (w.r.t. input voltage) unity by connecting a capacitor in parallel with the inductor. What is the value of the capacitance. 1 point



- (●) 66.3micro-Farad
- ( ) 33.2micro-Farad
- ( ) 11micro-Farad
- ( ) None of the above

Clear selection

The bandwidth of a series (RLC) resonant circuit is 500 Hz. Resonant frequency is 6kHz, and if R = 10 Ω, calculate the inductance (L) and capacitance (C) of the circuit. 1 point

- ( ) L = 3.18H and C = 0.22micro-Farad
- ( ) L = 6.37H and C = 0.22micro-Farad
- (●) L = 3.18mH and C = 0.22micro-Farad
- ( ) L = 6.37mH and C = 0.22micro-Farad

Clear selection

Which of the following is false at resonance? 1 point

- (●) Peak energies stored by the inductor and the capacitor are equal.
- ( ) Energy shuttles to and fro between inductor and capacitor.
- ( ) No energy is taken from the source by the inductor and capcitor.
- ( ) None of the above

Clear selection

For a resistor in series with a inductor connected across a AC supply, which of the following is true ? 1 point

- ( ) Total Supply Average Power = Average Power dissipated in Inductor
- ( ) Total Supply Average Power = Power in Inductor + Power in resistor
- (●) Total Supply Average Power = Average Power dissipated in resistor
- ( ) Total Supply Average Power = Power in Resistor - Power in inductor

Clear selection

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