



United International University (UIU)
 Dept. of Computer Science & Engineering (CSE)

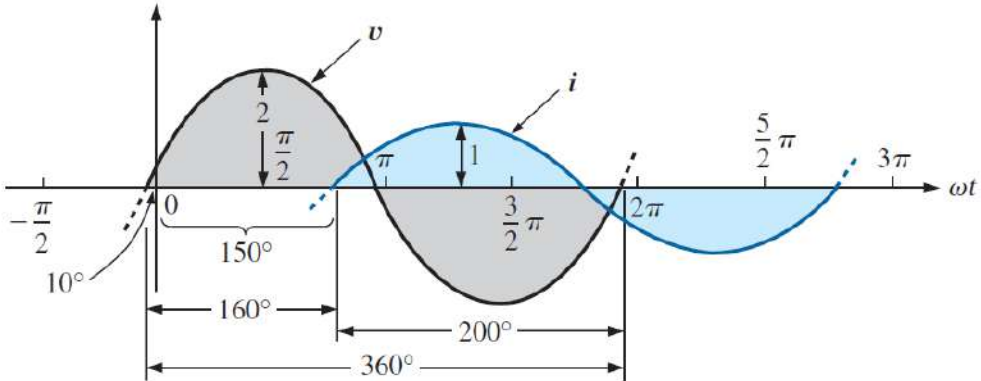
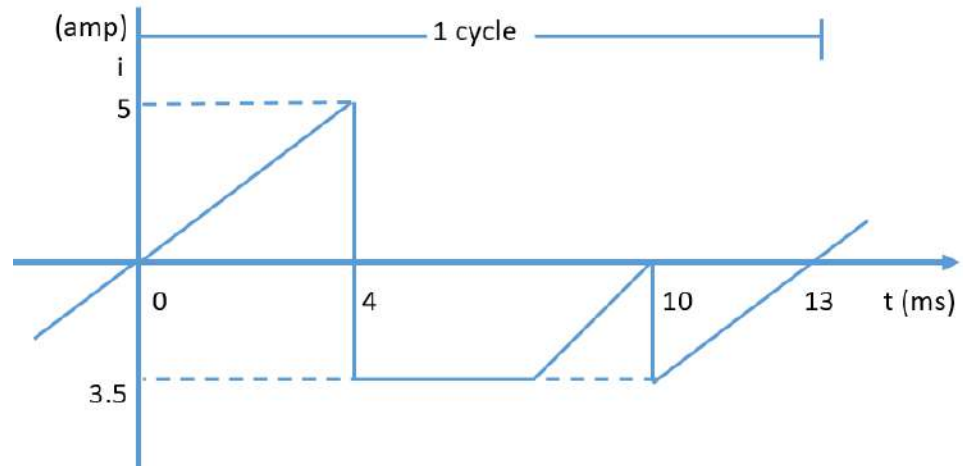
Final Exam : Trimester: Spring 2017

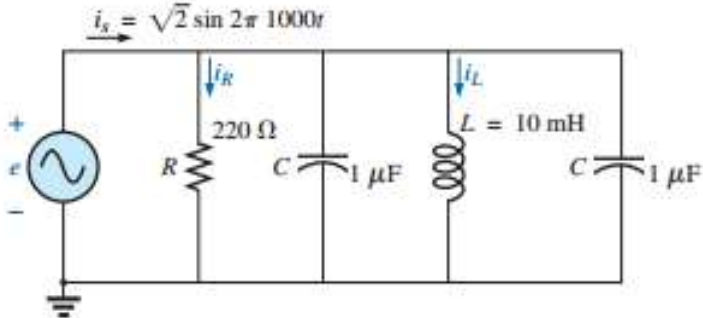
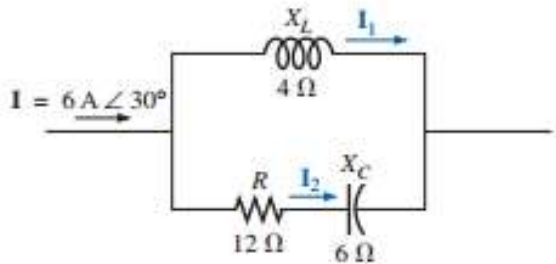
Course: CSE 113 Electrical Circuits,

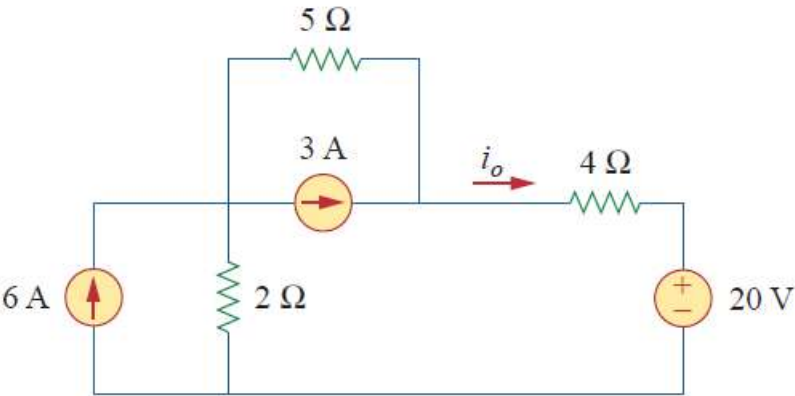
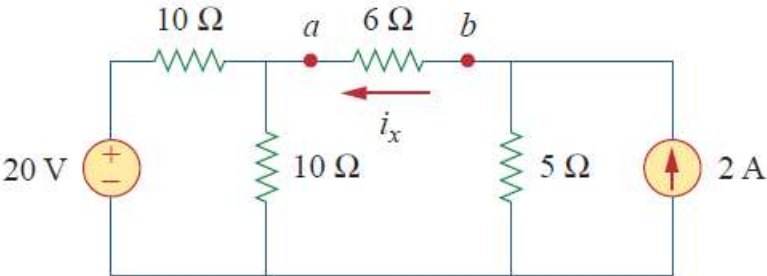
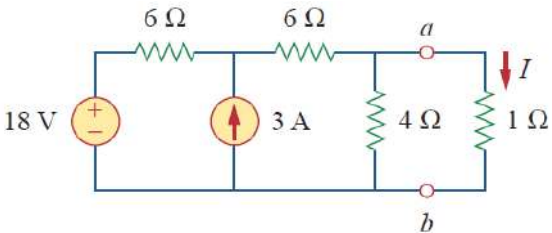
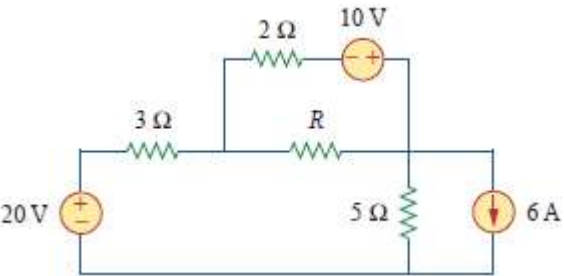
Marks: 40, Time: 2 hour

Figures in the right-hand margin indicate full marks.

Answer Any Four out of the Five Question Sets

1.	a)	<p>What will be the analytical expression for the following v and i curve? Find instantaneous value of current at $t = 3s$. What is the phase relation between v and i curve? [Given, frequency, $f = 100\text{Hz}$]</p> 	2+1+1
	b)	<p>What is frequency of the following i-curve? Calculate I_{avg} and I_{rms} for the curve.</p> 	1+2+3

2.	<p>Consider the following AC network</p> 	
a)	Calculate total admittance Y_T	3
b)	Find sinusoidal expression for e	3
c)	Find sinusoidal expression for i_R and i_L .	2
d)	Find the average power and power factor of the circuit indicating whether it is leading or lagging	2
3.	<p>Consider the following circuit.</p> 	
a)	Calculate total impedance Z_T and draw the impedance diagram.	4
c)	Calculate I_1 and I_2 in polar form.	2
d)	Draw phasor diagram showing I , I_1 and I_2	2
e)	Plot the sinusoidal expressoin of I , I_1 and I_2 on same set of axis.	2

4.	a)	<p>Use source transformation to find i_o.</p> 	5
	b)	<p>Find the Thevenin equivalent looking into terminals a-b of the following circuit and solve for i_x.</p> 	5
5.	a)	<p>Use Norton's theorem to find I_N, R_N and I from the following circuit. Also draw the Norton equivalent circuit.</p> 	5
	b)	<p>Consider the following circuit.</p>  <p>a) Find R for maximum power deliverable to R. b) Determine that maximum power.</p>	5