Department of Electrical, Electronics & Telecom Engineering
UET (Lahore) Faisalabad Campus

Student Name:_____

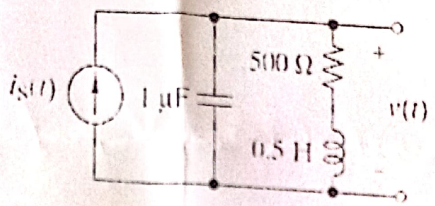
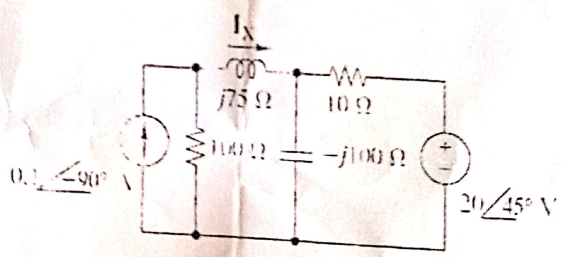
Reg. No. 2019EE-383

EE110 Circuit Analysis and Design

Fall 2022, Session 2021 (3rd Semester)
Mid Exam

- All the related parts of a question must be solved together.
- Understanding of question is part of exam.

Time Allowed: 60 Minutes
Total Marks: 30

Q.1		In a series RLC circuit the zero-input voltage across the 1-μF capacitor is $v_c(t) = 10e^{-1000t}\sin 2000t\ V \quad t \geq 0$		CLO1
	A	**Analyze** the response and find the circuit characteristic equation	3	
	B	Find R and L	4	
	C	Find $i_L(t)$ for $t \geq 0$	2	
	D	Find the initial values of the state variables	1	
Q.2		The circuit in Figure below is operating in the sinusoidal steady state with $i_S(t) = 100\cos(1000t - 45^\circ)\ mA$ 		CLO2
	A	**Analyze** the circuit and transform it into phasor domain	2	
	B	Solve for the phasor voltage **V**	3	
	C	Solve for the phasor current through each element	3	
	D	Find the waveforms corresponding to the phasors found in (b) and (c)	2	
Q.3	A	The two sources in Figure below have the same frequency. **Analyze** the circuit and use superposition to find the phasor current I_x 	10	