



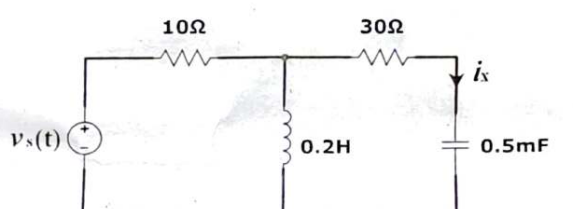
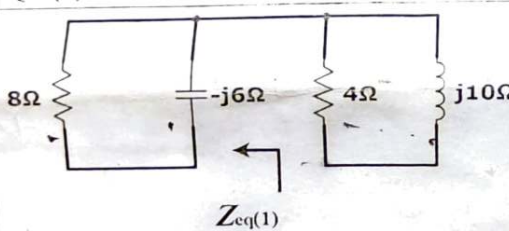
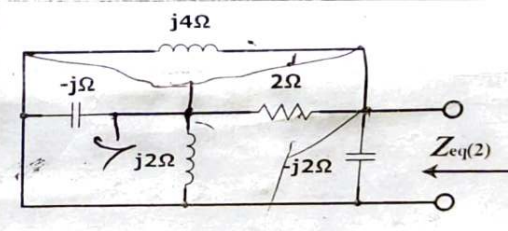
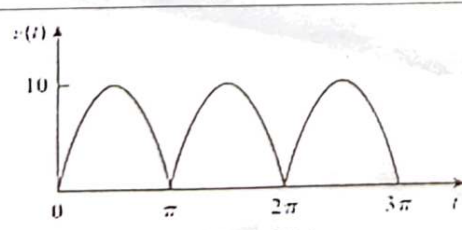
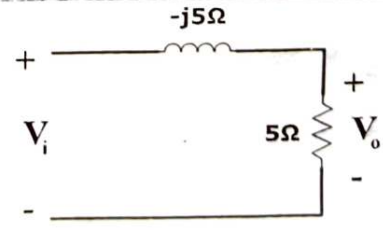
Daffodil International University
Department of Electrical and Electronic Engineering
Faculty of Engineering
Final Examination, Fall – 2023 (Day)

Course Code: 0713-121
Section: A, B, C, D
Full Marks: 25

Course Title: Electrical Circuits II
Level-Term: L1-T2
Exam Date: September 23, 2023

Teacher's Initial: MSA, KNN
Time: 1.5 Hours

Answer any five out of seven

Q.1	If $v_s(t) = 20 \sin(100t - 40^\circ)$ volt, find $i_x(t)$ in the following figure Q.1.  Fig: Q.1	CO-1 C(2) 5
Q.2	Find the equivalent impedance $Z_{eq(1)}$ in the following figure Q.2(a) & $Z_{eq(2)}$ in figure Q.2(b).   Fig: Q.2(a) Fig: Q.2(b)	CO-1 C(2) 5
Q.3	(a) Find the r.m.s. value of the full wave rectified voltage in figure Q.3(a). (b) Calculate the phase shift angle by the RL circuit in figure Q.3(b).   Fig: Q.3(a) Fig: Q.3(b)	CO-2 C(2) 5

- Q.4 (a) Determine i_o in the following figure Q.4, when DC voltage source is active only.
(b) Calculate the reactances when (1) v_1 is active only, and (2) v_2 is active only

CO-2
C(3)

5

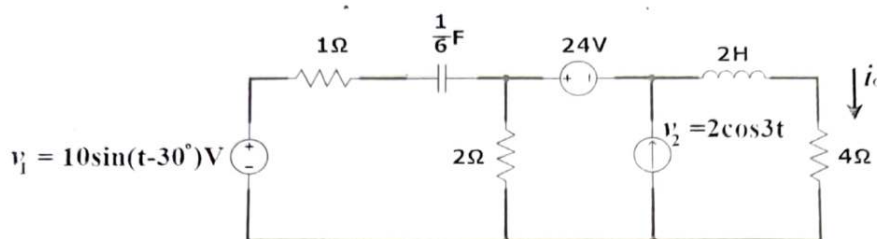


Fig: Q.4

- Q.5 Calculate I_o in the following circuit using (a) Norton's theorem, and (b) Thevenin's theorem.

CO-2
C(3)

5

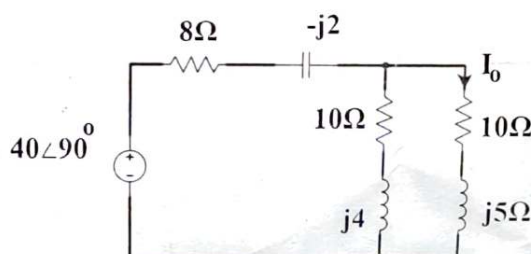


Fig: Q.5

- Q.6 (a) Obtain the nodal equations for the following figure Q.6(a).
(b) Obtain the equation for the super mesh in the following figure Q.6(b).

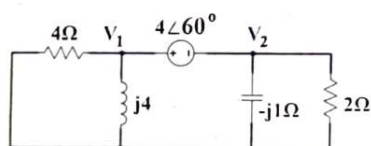


Fig: Q.6(a)

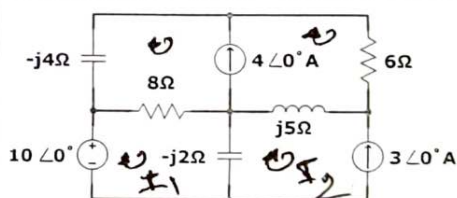


Fig: Q.6(b)

- Q.7 (a) Using current divider rule, calculate I_o in the following figure Q.7.
(b) Using concept of source theorem, calculate also I_o .

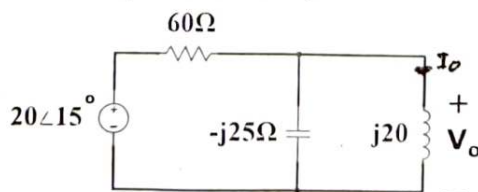


Fig: Q.7