September 15, 2021

EAST WEST UNIVERSITY
Department of Computer Science and Engineering
B.Sc. in Computer Science and Engineering Program
Final Examination, Summer 2021 Semester

Course:	**CSE 109/209 Electrical Circuits, Section-5**
Instructor:	**M. Saddam Hossain Khan, Senior Lecturer, CSE Department**
Full Marks:	**20 (20 will be counted for final grading)**
Time:	**1 Hour and 30 Minutes (Including submission)**

Note: There are FIVE questions, answer ALL of them. Course Outcome (CO), Cognitive Level and Mark of each question are mentioned at the right margin.

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1. **Determine** $v(t)$ and $i(t)$ in the following circuit. [CO1,C2, Mark:3]

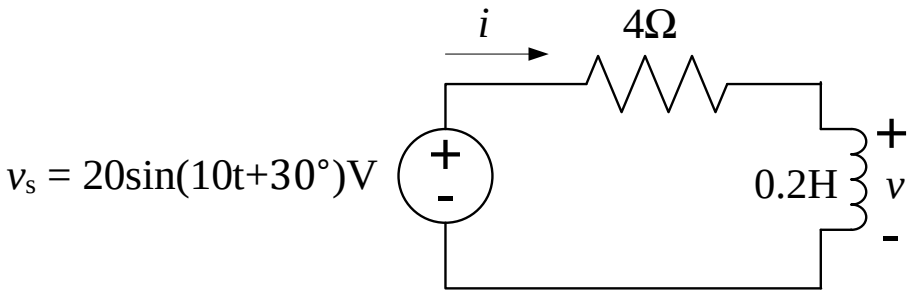
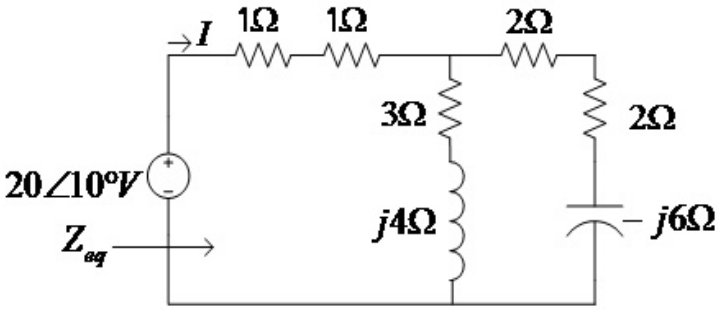
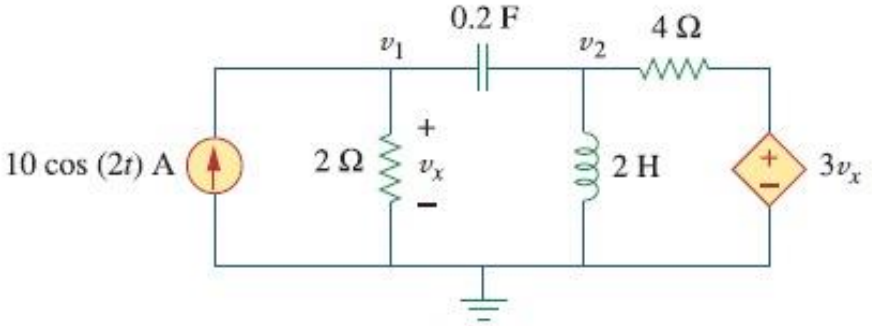


Figure 1

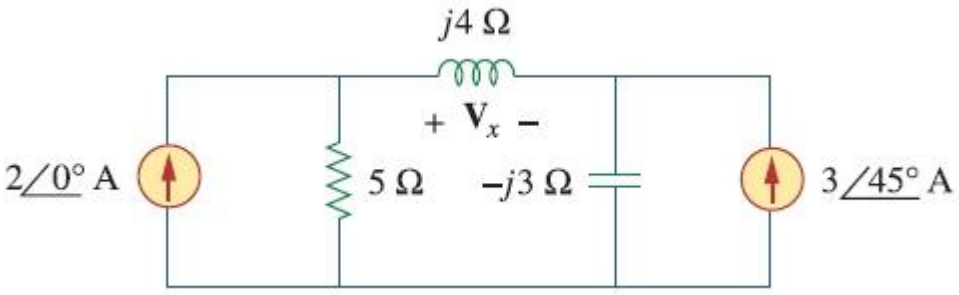
2. **Determine** Z_{eq} and I for the following circuit. [CO1,C2, Mark: 3]



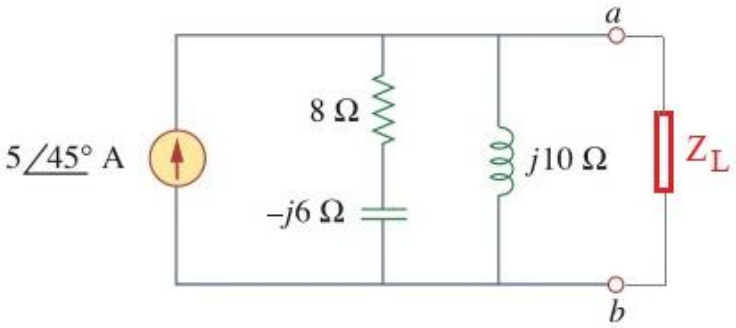
3. Using nodal analysis, **compute** $v_2(t)$ for the following circuit [Show analysis using Cramer's rule]. [CO3,C4, Mark: 4]



4. Using the superposition principle, **find** V_x in the following circuit. [CO3,C4, Mark:4]



5. a) **Find** the value of $\boldsymbol{Z}_L$ that will absorb the maximum power and the value of the maximum power in the following circuit. [CO3,C4, Mark:6]



b) **Find** the average power supplied by the source and absorbed by the resistor from Figure 1.