

Brac University

Semester: Summer 2022

Course No: CSE250

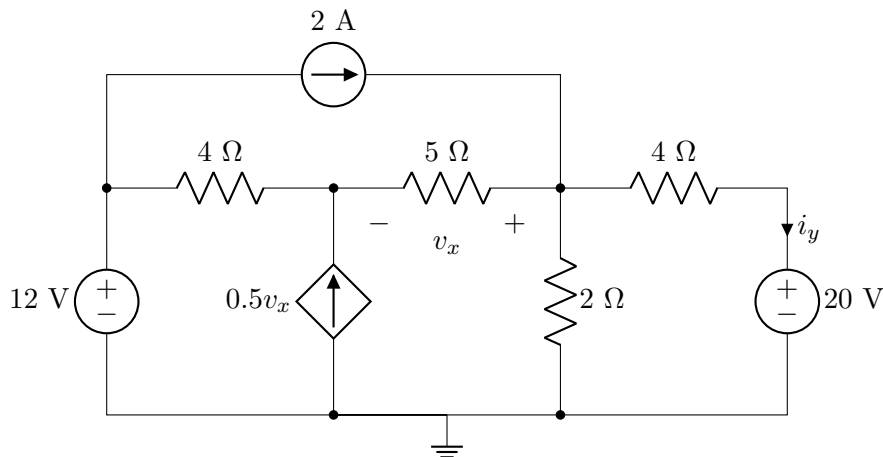
Course Title: CIRCUITS AND ELECTRONICS

Date: July 27, 2022

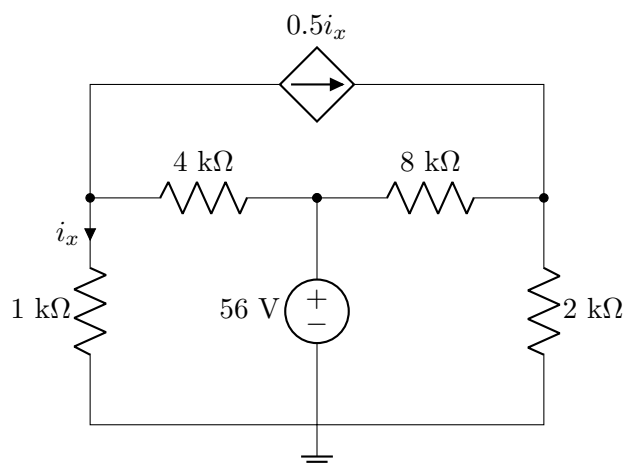
Midterm Exam

Full Marks: 50 (+5 bonus)

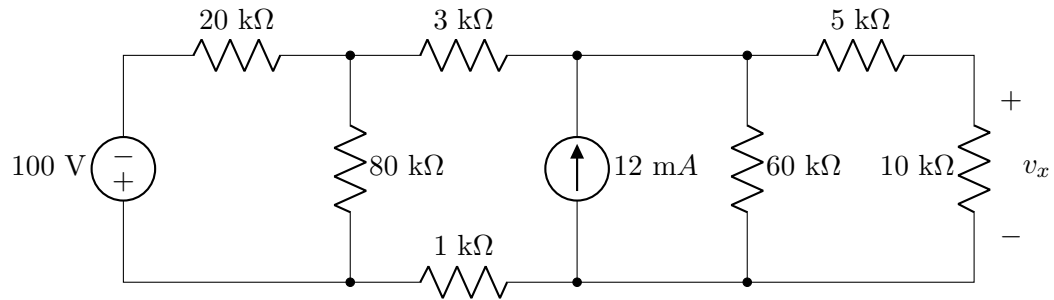
Duration: 1 hour 20 minutes

Question 1 of 3 [20 marks]

- **Apply Nodal/Mesh Analysis to identify** the values of the node voltages/mesh currents. *(Equations must be highlighted using boxes).* (18 marks) [CO2, CO4]
- **What** is the value of v_x and i_y ? (with appropriate \pm sign)? (2 marks) [CO1, CO2]

Question 2 of 3 [20 marks]

- **Apply Nodal/Mesh Analysis to identify** the values of the node voltages/mesh currents. *(Equations must be highlighted using boxes).* (14 marks) [CO2, CO4]
- **What** is the power absorbed by the 4 kΩ resistor? (with appropriate \pm sign)? (2 marks) [CO1, CO2]
- **What** is the power supplied/absorbed by the voltage source? (with appropriate \pm sign)? (4 marks) [CO1, CO2]

Question 3 of 3 [15 marks]

- **Determine** the voltage v_x across the 10 kΩ resistor by performing a succession of appropriate **Source Transformations**.
(15 marks) [CO2, CO4]