Name:

**Brac University**
Semester: Fall 2025
Course Code: CSE481
Quantum Computing I
Section: 01
Faculty: SDS

Set **A**

Assessment: *Lab Quiz*
Duration: 1 hour
Date: February 9, 2026
Full Marks: 10

- ✓ No washroom breaks. Phones must be turned off. Using/carrying any notes during the exam is not allowed.
- ✓ All **4 question(s)** are compulsory. Marks allotted for each question are mentioned beside each question.
- ✓ Write your answers inside the indicated boxes (where applicable). If you run out of room, continue on the back page.
- ✓ Symbols have their usual meanings.

DO NOT WRITE ANYTHING ELSE INSIDE THIS BORDER

Student ID

Set Identifier

Answers (Q1-Q10) Answers (Q11-Q20) Answers (Q21-Q30)

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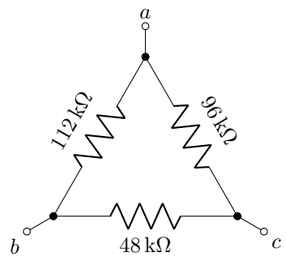
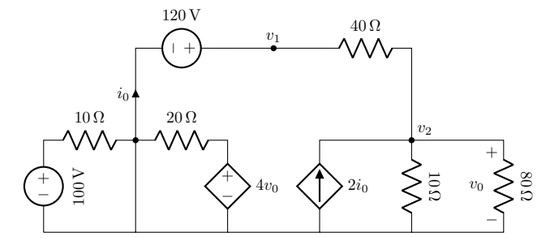
### ♢ Question 1 of 4 *[CO3] [5 marks]*




Which of the following statements is true?

**(a)** $R_{ab} = R_{bc} = R_{ca} = 24.889\,\text{k}\Omega$
**(b)** $R_{ab} = 63\,\text{k}\Omega, R_{bc} = 39\,\text{k}\Omega, R_{ca} = 60\,\text{k}\Omega$
**(c)** $R_{ab} = 63\,\Omega, R_{bc} = 39\,\Omega, R_{ca} = 60\,\Omega$
**(d)** $R_{ab} = 112\,\text{k}\Omega, R_{bc} = 48\,\text{k}\Omega, R_{ca} = 96\,\text{k}\Omega$
**(e)** None of the above

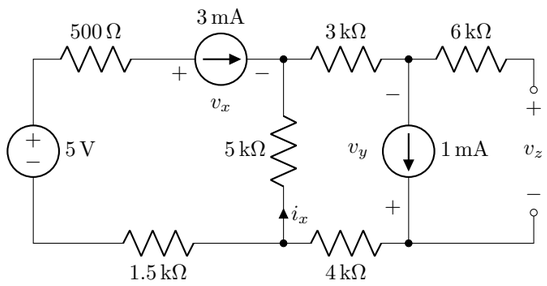
### ♢ Question 2 of 4 *[CO1] [1 mark]*




How many nodes are in this circuit?

**(a)** 6 **(b)** 3 **(c)** 5 **(d)** 7 **(e)** 4

### ♢ Question 3 of 4 *[CO3] [2 marks]*



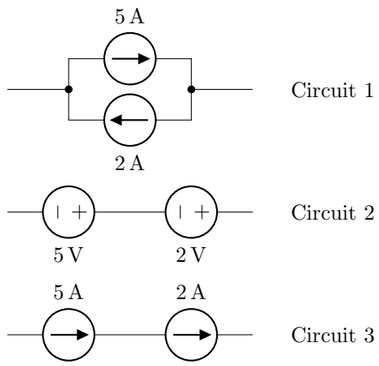

**(a)** a

**(b)** b

**(c)** c

Which of the following circuits is/are impossible (violates Kirchhoff's laws)?

### ♢ Question 4 of 4 *[CO1] [2 marks]*




**(a)** Circuit 1 **(b)** Circuit 2 **(c)** Circuit 3 **(d)** Circuit 1 & 3 **(e)** None of the above

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Quantum Computing I
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Set **B**

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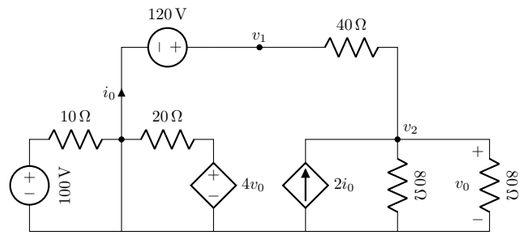
## ♢ Question 1 of 4 *[CO1] [1 mark]*

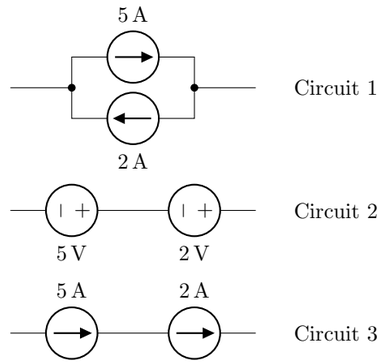



How many nodes are in this circuit?

**(a)** 3 **(b)** 7 **(c)** 4 **(d)** 6 **(e)** 5

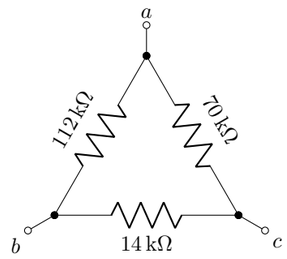
## ♢ Question 2 of 4 *[CO1] [2 marks]*

Which of the following circuits is/are impossible (violates Kirchhoff's laws)?




**(a)** Circuit 1 & 3 **(b)** Circuit 1 **(c)** Circuit 3
**(d)** Circuit 2 **(e)** None of the above

## ♢ Question 3 of 4 *[CO3] [5 marks]*



Which of the following statements is true?

**(a)** $R_{ab} = 48\,\Omega, R_{bc} = 13\,\Omega, R_{ca} = 45\,\Omega$

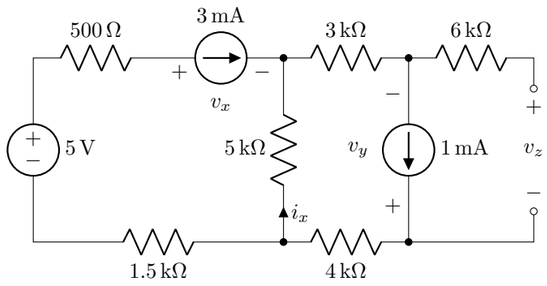
**(b)** $R_{ab} = 48\,\mathrm{k}\Omega, R_{bc} = 13\,\mathrm{k}\Omega, R_{ca} = 45\,\mathrm{k}\Omega$

**(c)** $R_{ab} = 112\,\mathrm{k}\Omega, R_{bc} = 14\,\mathrm{k}\Omega, R_{ca} = 70\,\mathrm{k}\Omega$

**(d)** $R_{ab} = R_{bc} = R_{ca} = 10.566\,\mathrm{k}\Omega$

**(e)** None of the above

## ♢ Question 4 of 4 *[CO3] [2 marks]*




**(a)** a

**(b)** b

**(c)** c

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Set C

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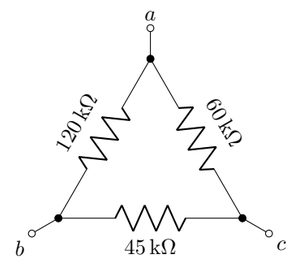
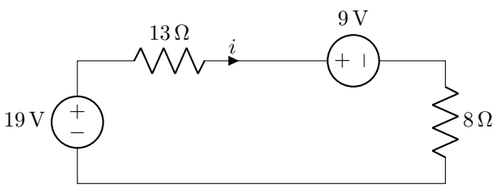
## ♢ Question 1 of 4 *[CO3] [5 marks]*




Which of the following statements is true?

**(a)** $R_{ab} = 56\,\text{k}\Omega, R_{bc} = 36\,\text{k}\Omega, R_{ca} = 44\,\text{k}\Omega$
**(b)** $R_{ab} = 120\,\text{k}\Omega, R_{bc} = 45\,\text{k}\Omega, R_{ca} = 60\,\text{k}\Omega$
**(c)** $R_{ab} = 56\,\Omega, R_{bc} = 36\,\Omega, R_{ca} = 44\,\Omega$
**(d)** $R_{ab} = R_{bc} = R_{ca} = 21.176\,\text{k}\Omega$
**(e)** None of the above

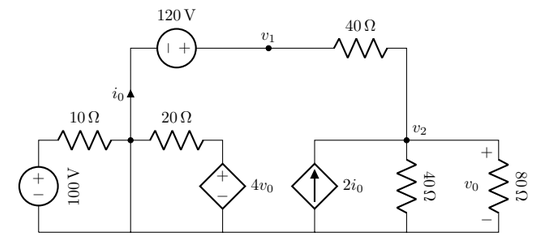
## ♢ Question 2 of 4 *[CO3] [2 marks]*




What's the relation between $v_1, v_2$ and $i$?

**(a)** $-19 + 13i - 9 + 8i = 0$
**(b)** $-19 - 13i - 9 + 8i = 0$
**(c)** $-19 - 13i + 9 + 8i = 0$
**(d)** $-19 + 13i + 9 + 8i = 0$
**(e)** None of the above

## ♢ Question 3 of 4 *[CO1] [1 mark]*

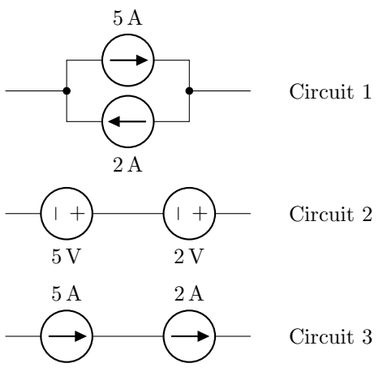



How many nodes are in this circuit?

**(a)** 3 **(b)** 6 **(c)** 4 **(d)** 7 **(e)** 5

## ♢ Question 4 of 4 *[CO1] [2 marks]*

Which of the following circuits is/are impossible (violates Kirchhoff's laws)?




**(a)** Circuit 3 **(b)** Circuit 1 **(c)** Circuit 1 & 3
**(d)** Circuit 2 **(e)** None of the above

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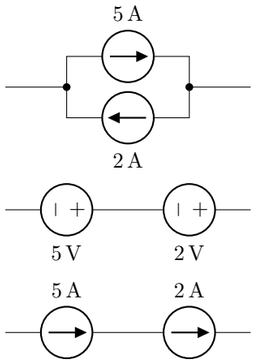
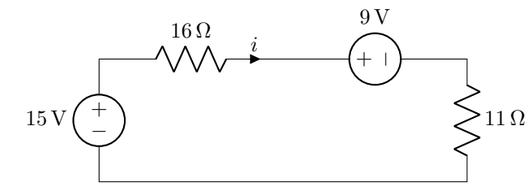
### ♢ Question 1 of 4 *[CO1] [2 marks]*

Which of the following circuits is/are impossible (violates Kirchhoff's laws)?




**(a)** Circuit 2 **(b)** Circuit 3 **(c)** Circuit 1 **(d)** Circuit 1 & 3 **(e)** None of the above

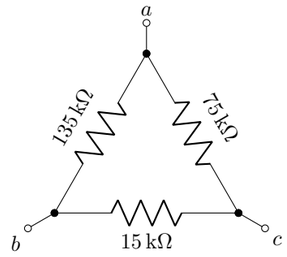
### ♢ Question 2 of 4 *[CO3] [2 marks]*




What's the relation between $v_1, v_2$ and $i$?

**(a)** $-15 - 16i - 9 + 11i = 0$
**(b)** $-15 + 16i + 9 + 11i = 0$
**(c)** $-15 + 16i - 9 + 11i = 0$
**(d)** $-15 - 16i + 9 + 11i = 0$
**(e)** None of the above

### ♢ Question 3 of 4 *[CO3] [5 marks]*



Which of the following statements is true?

**(a)** $R_{ab} = 54\,\Omega, R_{bc} = 14\,\Omega, R_{ca} = 50\,\Omega$

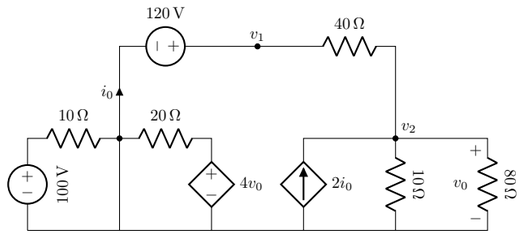
**(b)** $R_{ab} = R_{bc} = R_{ca} = 11.441\,\text{k}\Omega$

**(c)** $R_{ab} = 135\,\text{k}\Omega, R_{bc} = 15\,\text{k}\Omega, R_{ca} = 75\,\text{k}\Omega$

**(d)** $R_{ab} = 54\,\text{k}\Omega, R_{bc} = 14\,\text{k}\Omega, R_{ca} = 50\,\text{k}\Omega$

**(e)** None of the above

## ♢ Question 4 of 4 *[CO1] [1 mark]*




How many nodes are in this circuit?

**(a)** 7 **(b)** 5 **(c)** 6 **(d)** 4 **(e)** 3