ID:	Name:

#### **Brac University**

Semester: Spring 2023 Course Code: CSE250 Circuits And Electronics

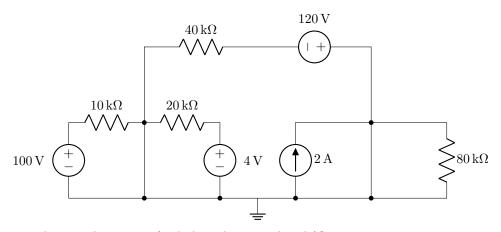
Section: 05 Faculty: SHS



Assessment: Quiz 1
Duration: 30 minutes
Date: February 7, 2023
Full Marks (incl. bonus 0): 20

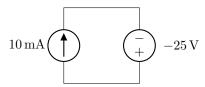
- $\checkmark$  No washroom breaks. Phones must be turned off. Using/carrying any notes during the exam is not allowed.
- $\checkmark$  At the end of the exam, both the **answer script** and the **question paper** must be returned to invigilator.
- ✓ All 4 questions are compulsory. Marks allotted for each question are mentioned beside each question.
- $\checkmark$  Bonus questions are indicated as "(bonus)" along with allotted marks.
- $\checkmark$  Write your answers inside the indicated boxes. In case you run out of room for an answer, please continue on the back of the page.

## $\blacksquare$ Question 1 of 4 [CO1] [2 marks]



How many nodes are there in this circuit (including the ground node)?

### $\blacksquare$ Question 2 of 4 [CO2] [6 marks]



(a)	(a) [2 marks] What is the power of the current source (with appropriate $\pm$ sign and unit)?	
(b)	[1 mark] Based on your answer in (a), is the current source supplying/consuming power?	
(c)	[2 marks] What is the power of the voltage source (with appropriate $\pm$ sign and unit)?	

(d) [1 mark] Based on your answer in (c), is the voltage source supplying/consuming power?

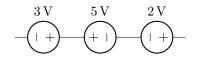
#### [CO2] [2 marks] ■ Question 3 of 4

Which of the following circuits are illegal connection? For each of the circuits below, put a checkmark  $(\checkmark)$  on either "Legal" or "Illegal". Explain why in each case.

(a) [ $\frac{1}{2}$  mark] The following connection is:  $\bigcirc$  Legal

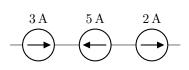


○ Illegal



(b)  $\lceil \frac{1}{2} \mod r \rceil$  The following connection is:  $\bigcirc$  Legal

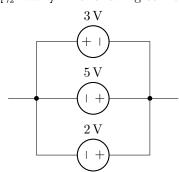




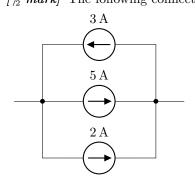
(c) [ $\frac{1}{2}$  mark] The following connection is:  $\bigcirc$  Legal



○ Illegal



(d) [ $\frac{1}{2}$  mark] The following connection is:  $\bigcirc$  Legal ○ Illegal



# $\blacksquare$ Question 4 of 4 [CO3] [10 marks]

What is the value of equivalent resistance  $R_{eq}$ ? [Must show step by step procedure of finding  $R_{eq}$ ]

