

**LAHORE UNIVERSITY OF MANAGEMENT SCIENCES**  
Department of Electrical Engineering

**EE240 Circuits I**  
**Quiz 02**

Name: \_\_\_\_\_

Campus ID: \_\_\_\_\_

Total Marks: 10

Time Duration: 20 minutes

**Question 1** (3 marks)

Do you agree with the following statements? Provide brief justification to support your answer.

- (a) [1 mark] Ideal current sources cannot be connected in series.
- (b) [1 mark] Ideal voltage source and ideal current source in series is equivalent to the ideal current source only.
- (c) [1 mark] Practical voltage source can be modeled as an ideal voltage source with very small resistance in parallel.

**Question 2** (2 marks)

We can model a practical current source using an ideal current source and a resistance.

- (a) [1 mark] Draw such model of the practical current source.
- (b) [1 mark] Write down an equation describing  $i-v$  characteristics of the practical current source. Sketch  $i-v$  characteristics of the the practical current source.

**Question 3** (5 marks)

Consider a network of capacitors shown below. If the equivalent capacitance across terminals A and B is  $C_T = 10 \mu F$ , find the value of capacitance  $C$  indicated in the network. Ignore the polarity of the capacitors.

