

25 Lecture - PHY301

Important Mcqs

What does Norton's theorem state about a linear circuit?

- A. It can be replaced with a single voltage source and a series resistor.
- B. It can be replaced with a single current source and a parallel resistor.
- C. It can be replaced with a single capacitor and an inductor.
- D. None of the above.

Answer: B

What is the equivalent resistance in a Norton equivalent circuit?

- A. The resistance across the two terminals of the circuit.
- B. The resistance across the two parallel components in the circuit.
- C. The resistance across the two series components in the circuit.
- D. None of the above.

Answer: A

Can Norton's theorem be applied to nonlinear circuits?

- A. Yes
- B. No

Answer: B

What is the significance of the Norton current in a circuit?

- A. It is equal to the open circuit voltage of the circuit.
- B. It is equal to the short circuit current of the circuit.
- C. It is equal to the equivalent resistance of the circuit.
- D. None of the above.

Answer: B

How is the Norton equivalent circuit different from the original circuit?

- A. The Norton equivalent circuit has a single voltage source and a series resistor.
- B. The Norton equivalent circuit has a single current source and a parallel resistor.
- C. The Norton equivalent circuit has the same number of components as the original circuit.
- D. None of the above.

Answer: B

What is the purpose of using Norton's theorem in circuit analysis?

- A. To make the circuit more complicated.
- B. To make the circuit easier to analyze.
- C. To increase the voltage across the circuit.
- D. None of the above.

Answer: B

What is the Norton resistance in a circuit?

- A. It is equal to the resistance between the two terminals of the circuit when all the independent sources are turned off.
- B. It is equal to the resistance between the two parallel components in the circuit.
- C. It is equal to the resistance between the two series components in the circuit.
- D. None of the above.

Answer: A

How is the Norton equivalent circuit useful in circuit design?

- A. It can be used to calculate the equivalent resistance of the circuit.
- B. It can be used to calculate the voltage across any load resistance connected between the two terminals of the circuit.
- C. It can be used to calculate the current across any load resistance connected between the two terminals of the circuit.

D. None of the above.

Answer: B

How is the Norton current determined in a circuit?

A. It is equal to the voltage across the circuit.

B. It is equal to the resistance of the circuit.

C. It is equal to the short circuit current that would flow through the original circuit when the load resistance is set to zero.

D. None of the above.

Answer: C

What is the difference between Norton's current and load current in a circuit?

A. Norton's current is the current that flows through the circuit when the load resistance is nonzero, while the load current is the current that would flow through the circuit when the load resistance is set to zero.

B. Norton's current is the current that would flow through the circuit when the load resistance is set to zero, while the load current is the current that flows through the circuit when the load resistance is nonzero.

C. Norton's current is the same as the load current.

D. None of the above.

Answer: B