

Chapter 6.0 Hamtronics

Section 6.4 Impedance & Reactance

G5A01 (C) p.205

What is impedance?

- A. The electric charge stored by a capacitor
- B. The inverse of resistance
- C. The opposition to the flow of current in an AC circuit
- D. The force of repulsion between two similar electric fields

G5A02 (B) p.205

What is reactance?

- A. Opposition to the flow of direct current caused by resistance
- B. Opposition to the flow of alternating current caused by capacitance or inductance
- C. A property of ideal resistors in AC circuits
- D. A large spark produced at switch contacts when an inductor is de-energized

G5A03 (D) p.206

Which of the following causes opposition to the flow of alternating current in an inductor?

- A. Conductance
- B. Reluctance
- C. Admittance
- D. Reactance

G5A04 (C) p.205

Which of the following causes opposition to the flow of alternating current in a capacitor?

- A. Conductance
- B. Reluctance
- C. Reactance
- D. Admittance

G5A05 (D) p.205

How does an inductor react to AC?

- A. As the frequency of the applied AC increases, the reactance decreases
- B. As the amplitude of the applied AC increases, the reactance increases
- C. As the amplitude of the applied AC increases, the reactance decreases
- D. As the frequency of the applied AC increases, the reactance increases

G5A06 (A) p.206

How does a capacitor react to AC?

- A. As the frequency of the applied AC increases, the reactance decreases
- B. As the frequency of the applied AC increases, the reactance increases
- C. As the amplitude of the applied AC increases, the reactance increases
- D. As the amplitude of the applied AC increases, the reactance decreases

G5A07 (D) p.205

What happens when the impedance of an electrical load is equal to the output impedance of a power source, assuming both impedances are resistive?

- A. The source delivers minimum power to the load
- B. The electrical load is shorted
- C. No current can flow through the circuit
- D. The source can deliver maximum power to the load

G5A08 (A) p.210

Why is impedance matching important?

- A. So the source can deliver maximum power to the load
- B. So the load will draw minimum power from the source
- C. To ensure that there is less resistance than reactance in the circuit
- D. To ensure that the resistance and reactance in the circuit are equal

G5A09 (B) p.205

What unit is used to measure reactance?

- A. Farad
- B. Ohm
- C. Ampere
- D. Siemens

G5A10 (B) p.205

What unit is used to measure impedance?

- A. Volt
- B. Ohm
- C. Ampere
- D. Watt

G5A11 (A) p.210

Which of the following describes one method of impedance matching between two AC circuits?

- A. Insert an LC network between the two circuits
- B. Reduce the power output of the first circuit
- C. Increase the power output of the first circuit
- D. Insert a circulator between the two circuits

G5A13 (D) p.210

Which of the following devices can be used for impedance matching at radio frequencies?

- A. A transformer
- B. A Pi-network
- C. A length of transmission line
- D. All of these choices are correct

G7B09 (C) p.209

What determines the frequency of an LC oscillator?

- A. The number of stages in the counter
- B. The number of stages in the divider
- C. The inductance and capacitance in the tank circuit
- D. The time delay of the lag circuit