33 Lecture - PHY301

Important Mcqs

Which property of a system is essential for the small signal model?

A) Nonlinearity

B) Instability

C) Linearity

D) Oscillation

Answer: C) Linearity

What is the small signal model based on?

A) The principle of nonlinearity

B) The principle of instability

C) The principle of superposition

D) The principle of oscillation

Answer: C) The principle of superposition

Which components are typically included in a small signal model?

A) Transistors and amplifiers

B) Resistors, capacitors, and inductors

C) Transformers and power supplies

D) Microcontrollers and digital logic gates

Answer: B) Resistors, capacitors, and inductors

What is the purpose of amplifier design?

A) To remove unwanted signals from a signal

B) To generate periodic signals

C) To increase the amplitude of small signals

D) To convert AC signals to DC signals

Answer: C) To increase the amplitude of small signals

What is the purpose of filter design?

A) To remove unwanted signals from a signal

B) To generate periodic signals

C) To increase the amplitude of small signals

D) To convert AC signals to DC signals

Answer: A) To remove unwanted signals from a signal

What is the purpose of oscillator design?

A) To remove unwanted signals from a signal

B) To generate periodic signals

C) To increase the amplitude of small signals

D) To convert AC signals to DC signals

Answer: B) To generate periodic signals

Which technique is used to control the behavior of a circuit?

A) Amplification

B) Feedback

C) Filtering

D) Oscillation

Answer: B) Feedback

How does the small signal model help in circuit analysis?

A) It provides a simplified way to analyze the behavior of electronic devices.

B) It helps in generating periodic signals.

C) It removes unwanted signals from a signal.

D) It converts AC signals to DC signals.

Answer: A) It provides a simplified way to analyze the behavior of electronic devices.

Which property of a circuit is analyzed using the small signal model?

A) Nonlinear behavior

B) Large signal behavior

C) Small signal behavior

D) Steady-state behavior

Answer: C) Small signal behavior

What are the advantages of using the small signal model?

A) Simplified analysis of complex circuits

B) Greater accuracy in predicting circuit behavior

C) Efficient circuit design and optimization

D) All of the above

Answer: D) All of the above