# 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