

# 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**