

# 21 Lecture - PHY301

## Important Mcqs

**What is the superposition theorem?**

- a) A tool used to simplify complex circuits
- b) A theorem used to prove the existence of electric fields
- c) A principle used to calculate the magnetic field of a wire

**Answer: a) A tool used to simplify complex circuits**

**In which type of circuits can the superposition theorem be used?**

- a) Linear circuits only
- b) Nonlinear circuits only
- c) Both linear and nonlinear circuits

**Answer: a) Linear circuits only**

**What is the superposition theorem based on?**

- a) Kirchhoff's laws
- b) Ohm's law
- c) The principle of conservation of energy

**Answer: a) Kirchhoff's laws**

**What is the superposition theorem used to find?**

- a) Voltage only
- b) Current only
- c) Both voltage and current

**Answer: c) Both voltage and current**

**What does the superposition theorem state about sources in a circuit?**

- a) Sources should be removed before applying the theorem
- b) Sources should be considered one at a time while other sources are turned off
- c) Sources should be considered together to get the total result

**Answer: b) Sources should be considered one at a time while other sources are turned off**

**Which formula is used to find the current through a resistor using the superposition theorem?**

- a)  $V = IR$
- b)  $I = V/R$
- c)  $I = I_1 + I_2 + \dots + I_n$

**Answer: c)  $I = I_1 + I_2 + \dots + I_n$**

**Which formula is used to find the voltage across a resistor using the superposition theorem?**

- a)  $V = IR$
- b)  $I = V/R$
- c)  $V = V_1 + V_2 + \dots + V_n$

**Answer: c)  $V = V_1 + V_2 + \dots + V_n$**

**What is the advantage of using the superposition theorem?**

- a) It simplifies complex circuits
- b) It allows for the use of nonlinear elements in a circuit
- c) It is applicable to circuits with dependent sources only

**Answer: a) It simplifies complex circuits**

**Which principle is used to calculate voltage division in the superposition theorem?**

- a) Kirchhoff's voltage law
- b) Ohm's law
- c) Kirchhoff's current law

**Answer: b) Ohm's law**

**What is the limitation of using the superposition theorem?**

- a) It is applicable only to circuits with independent sources
- b) It is not applicable to circuits with nonlinear elements
- c) It is not applicable to circuits with capacitors or inductors

**Answer: b) It is not applicable to circuits with nonlinear elements**