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 = I1 + I2 + ... + In

Answer: c) I = I1 + I2 + ... + In

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

a) V = IR

b) I = V/R

c) V = V1 + V2 + ... + Vn

Answer: c) V = V1 + V2 + ... + Vn

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