5 Lecture - PHY301

Important Mcqs

What is a current divider with two parallel resistances?

a) A circuit that divides the voltage flowing through a circuit into two branches

b) A circuit that divides the current flowing through a circuit into two branches

c) A circuit that increases the current flowing through a circuit

d) A circuit that decreases the current flowing through a circuit

Answer: b) A circuit that divides the current flowing through a circuit into two branches

What is the formula for calculating the current flowing through each resistor in a current divider with two parallel resistances?

a) I1 = (R1 / (R1 + R2)) x I and I2 = (R2 / (R1 + R2)) x I

b) I1 = (R2 / (R1 + R2)) x I and I2 = (R1 / (R1 + R2)) x I

c) I1 = (R1 + R2) x I and I2 = (R1 + R2) x I

d) I1 = R1 x I and I2 = R2 x I

Answer: a) I1 = (R1 / (R1 + R2)) x I and I2 = (R2 / (R1 + R2)) x I

What happens to the current flowing through each resistor if the resistance value of one resistor is significantly higher than the other?

a) The current flowing through the higher resistance resistor is significantly less than the current flowing through the lower resistance resistor

b) The current flowing through the higher resistance resistor is significantly more than the current flowing through the lower resistance resistor

c) The current flowing through each resistor is equal

d) The current flowing through each resistor is unpredictable

Answer: a) The current flowing through the higher resistance resistor is significantly less than the current flowing through the lower resistance resistor

How is the current divider with two parallel resistances used in power supply circuits?

a) To increase the current flowing through the circuit

b) To distribute current between multiple loads, allowing the power supply to deliver a constant voltage to each load

c) To measure the current flowing through the circuit

d) To regulate the voltage flowing through the circuit

Answer: b) To distribute current between multiple loads, allowing the power supply to deliver a constant voltage to each load

What is the importance of the current divider with two parallel resistances in circuit analysis and design?

a) It allows us to calculate the voltage flowing through individual circuit components

b) It allows us to calculate the power flowing through individual circuit components

c) It allows us to calculate the current flowing through individual circuit components

d) It allows us to calculate the resistance value of individual circuit components

Answer: c) It allows us to calculate the current flowing through individual circuit components

Can the current divider with two parallel resistances be used with more than two resistors?

a) No, it can only be used with two resistors

b) Yes, but the calculation formula becomes more complex

c) Yes, but the calculation formula remains the same

d) Yes, but it requires additional circuit components

Answer: b) Yes, but the calculation formula becomes more complex

Can the current divider with two parallel resistances be used in AC circuits?

a) No, it can only be used in DC circuits

b) Yes, but the calculation formula is different, and the impedance value replaces the resistance value

c) Yes, but the calculation formula remains the same as in DC circuits

d) Yes, but it requires additional circuit components

Answer: b) Yes, but the calculation formula is different, and the impedance value replaces the resistance value