

# 4 Lecture - PHY301

## Important Subjective

**What is an ideal voltage source?**

**Answer:** An ideal voltage source is a theoretical concept in electrical engineering that provides a constant voltage output, regardless of the current flowing through it or any other external conditions.

**What is the difference between an ideal voltage source and a real voltage source?**

**Answer:** An ideal voltage source provides a constant voltage output, whereas a real voltage source may vary its output based on external conditions and has a non-zero internal resistance.

**What is the internal resistance of an ideal voltage source?**

**Answer:** An ideal voltage source has zero internal resistance.

**What happens to the voltage output of an ideal voltage source when it is short-circuited?**

**Answer:** The voltage output of an ideal voltage source remains constant even when it is short-circuited.

**Can an ideal voltage source exist in reality?**

**Answer:** No, an ideal voltage source is a theoretical concept and cannot exist in reality as it violates certain laws of physics.

**What is the practical application of an ideal voltage source in electrical engineering?**

**Answer:** The practical application of an ideal voltage source is to serve as a reference voltage for other circuits.

**Can the voltage output of an ideal voltage source change with time?**

**Answer:** No, the voltage output of an ideal voltage source is constant and does not change with time.

**What happens to the current flowing through an ideal voltage source when it is short-circuited?**

**Answer:** The current flowing through an ideal voltage source becomes infinite when it is short-circuited.

**What is the significance of an ideal voltage source in circuit analysis?**

**Answer:** An ideal voltage source simplifies the analysis of complex circuits as it provides a constant voltage output, making it easier to calculate circuit parameters such as voltage, current, and resistance.

**What are the limitations of an ideal voltage source?**

**Answer:** The limitations of an ideal voltage source are that it cannot exist in reality, and it cannot supply an infinite amount of current.