

# 34 Lecture - PHY301

## Important Subjective

**What is the primary function of a transformer?**

**Answer:** The primary function of a transformer is to transfer electrical energy from one circuit to another through electromagnetic induction.

**What is the turns ratio of a transformer?**

**Answer:** The turns ratio of a transformer is the ratio of the number of turns in the secondary winding to the number of turns in the primary winding.

**How is the voltage level of an electrical signal transformed by a transformer?**

**Answer:** The voltage level of an electrical signal is transformed by a transformer through the principle of electromagnetic induction. When an alternating current flows through the primary winding, it creates a magnetic field that induces a voltage in the secondary winding.

**What is the efficiency of a transformer?**

**Answer:** The efficiency of a transformer is the ratio of the power output to the power input. A transformer with high efficiency will convert a large proportion of the electrical energy supplied to it into useful output power.

**How are transformers used in power systems?**

**Answer:** Transformers are used in power systems to step up or step down the voltage level of electrical signals to reduce power losses during transmission over long distances and for distribution to consumers.

**What is the maximum power rating of a transformer?**

**Answer:** The maximum power rating of a transformer is the maximum amount of power that it can handle before it becomes damaged. The rating depends on factors such as the size of the magnetic core, the thickness of the winding wire, and the quality of the insulation.

**How are transformers used in audio equipment?**

**Answer:** Transformers are used in audio equipment to match the impedance of audio devices and to isolate audio signals from other electronic components.

**What is the frequency response of a transformer?**

**Answer:** The frequency response of a transformer refers to its ability to transmit signals of different frequencies. Transformers are designed to work within specific frequency ranges.

**What are some limitations of transformers?**

**Answer:** Limitations of transformers include their maximum power rating, their frequency response, and the effects of factors such as the quality of the magnetic core and the design of the winding.

**Why are transformers important in modern electrical engineering?**

**Answer:** Transformers are important in modern electrical engineering because they are a critical component in many electrical systems and are used for the transmission and distribution of electrical power as well as in various electronic devices. They help to maintain the efficiency of power systems and ensure the proper functioning of electronic devices.