

38 Lecture - PHY301

Important Subjective

What is a filter and what are its applications in circuit theory?

Answer: A filter is an electronic circuit that is used to remove unwanted signals or frequencies from a signal. In circuit theory, filters are used in a wide range of applications such as audio signal processing, power supplies, communication systems, and instrumentation systems.

What are the two types of filters?

Answer: The two types of filters are passive filters and active filters.

What is the basic difference between passive filters and active filters?

Answer: Passive filters use only passive components such as resistors, capacitors, and inductors, while active filters use both passive and active components such as transistors and op-amps.

What are the different types of passive filters?

Answer: The different types of passive filters are low-pass filters, high-pass filters, band-pass filters, and band-stop filters.

What is the cut-off frequency of a filter?

Answer: The cut-off frequency of a filter is the frequency at which the output of the filter starts to attenuate.

What is the transfer function of a filter?

Answer: The transfer function of a filter is the mathematical expression that describes the relationship between the input and output signals of the filter.

What is the purpose of a band-pass filter?

Answer: A band-pass filter is used to pass signals within a certain range of frequencies while attenuating signals outside this range.

What is the purpose of a low-pass filter?

Answer: A low-pass filter is used to pass signals with frequencies lower than the cut-off frequency while attenuating signals with frequencies higher than the cut-off frequency.

What is the purpose of a high-pass filter?

Answer: A high-pass filter is used to pass signals with frequencies higher than the cut-off frequency while attenuating signals with frequencies lower than the cut-off frequency.

What is the purpose of a band-stop filter?

Answer: A band-stop filter is used to attenuate signals within a certain range of frequencies while passing signals outside this range.