



# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

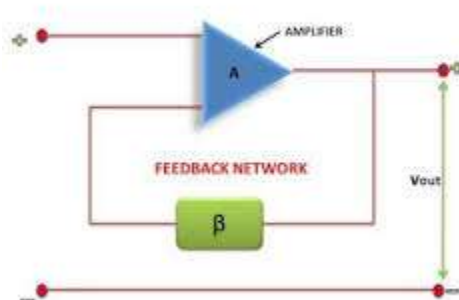
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## 23EET104 / ANALOG ELECTRONICS CIRCUITS I YEAR / II SEMESTER

### UNIT-V: FEEDBACK AMPLIFIER & OSCILLATOR



## INTRODUCTION – FEEDBACK AMPLIFIER



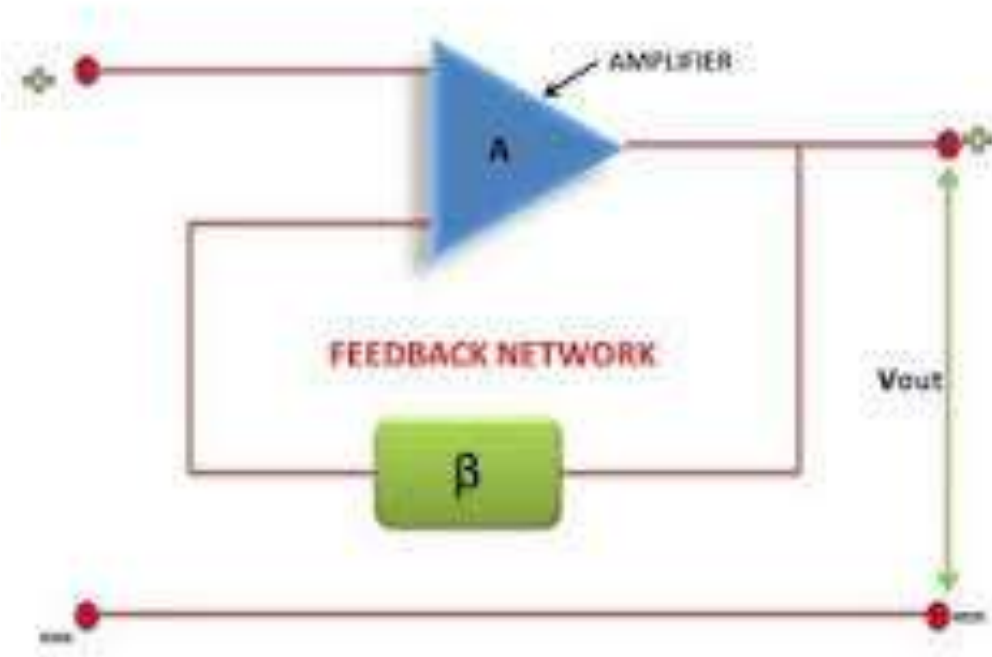


# Why Feedback? What is Feedback?



Feedback can lead to improved performance characteristics like effective control, increased bandwidth, increased gain, reduced distortion, and enhanced stability

The phenomenon of feeding a portion of the output signal back to the input circuit is known as feedback





# Types of Feedback



## 1. Positive or regenerate feedback:

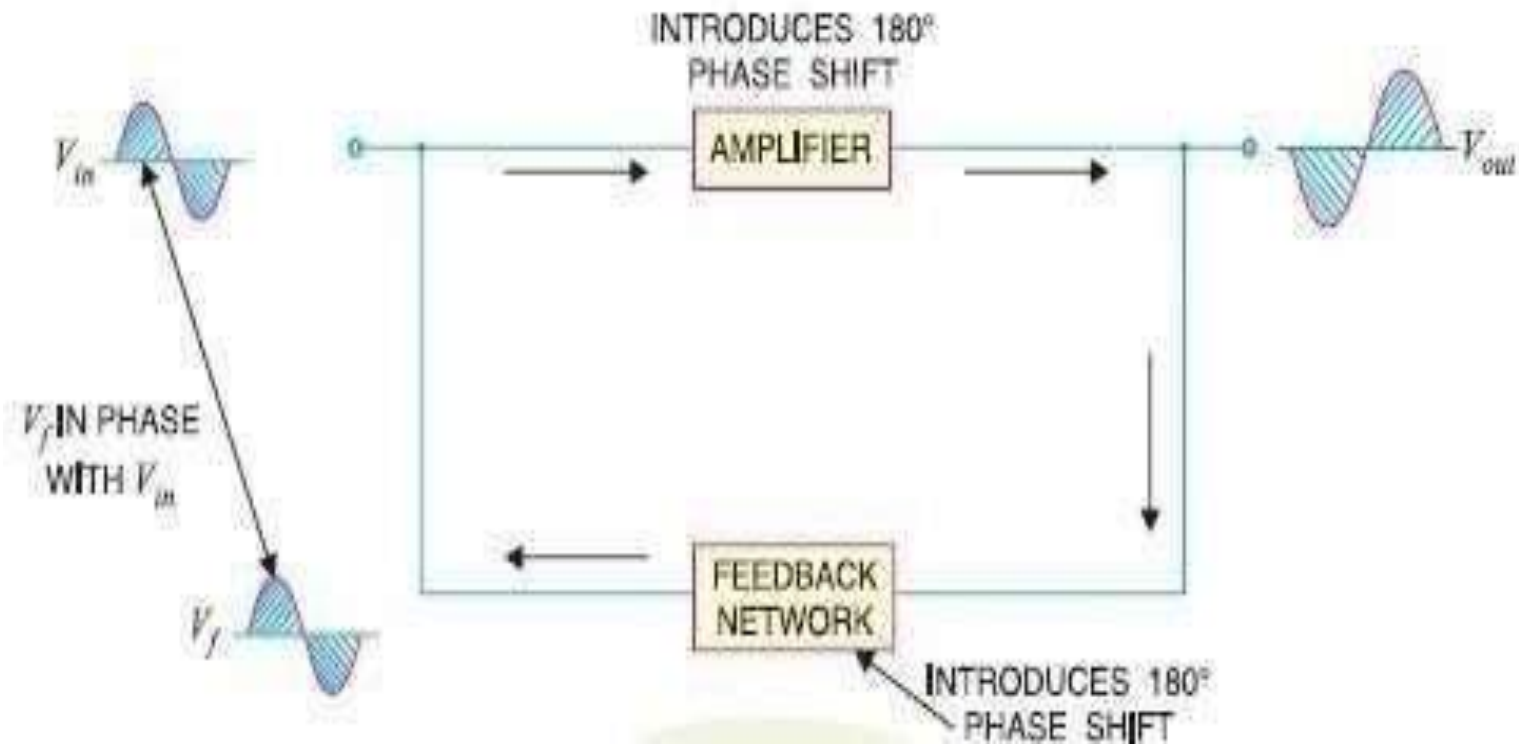
- In positive feedback, the feedback energy (voltage or currents), is in phase with the input signal and thus aids it.
- Positive feedback increases gain of the amplifier also increases distortion, noise and instability.
- Because of these disadvantages, positive feedback is seldom employed in amplifiers. But the positive feedback is used in oscillators.





# Types of Feedback

## Positive Feedback





# Types of Feedback



## 2. Negative or Degenerate feedback:

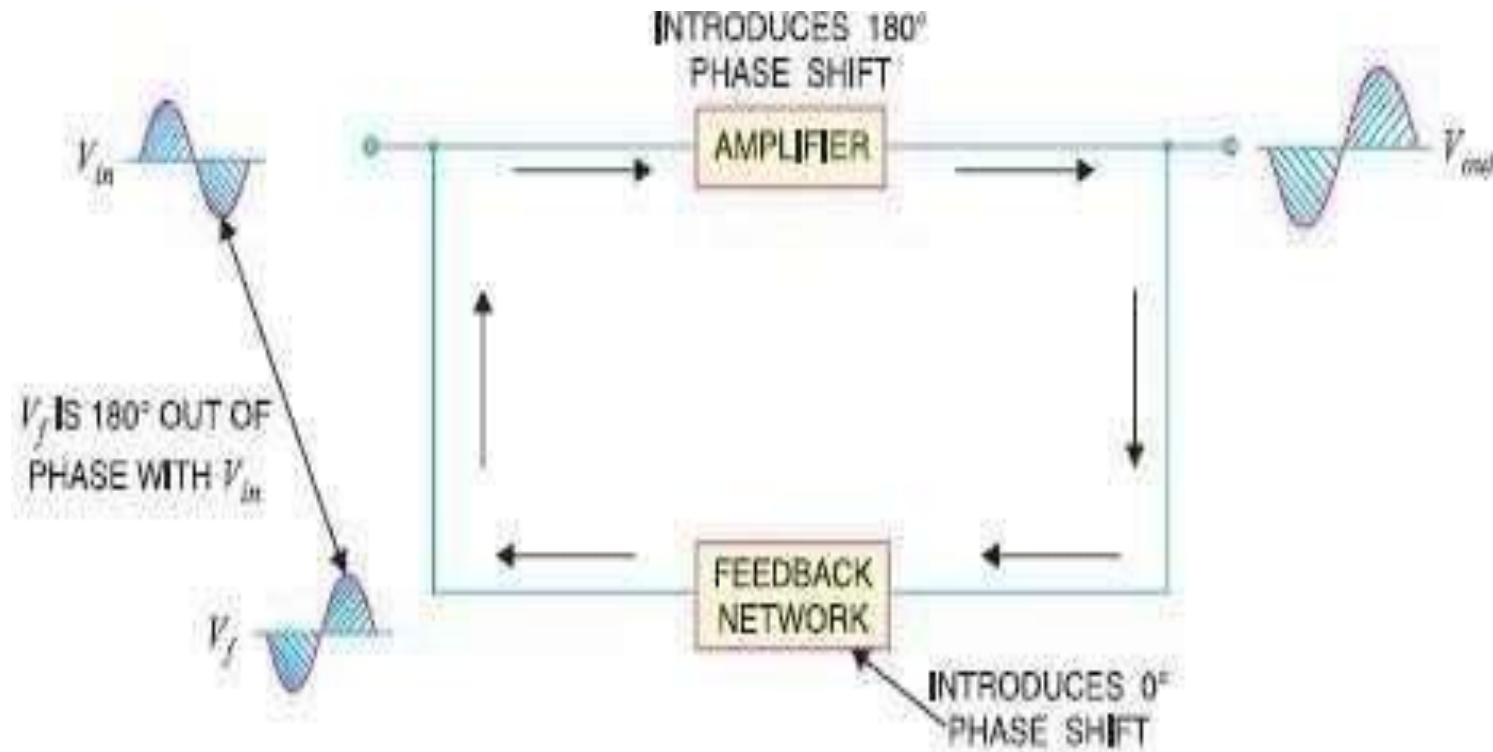
- In negative feedback, the feedback energy (voltage or current), is out of phase with the input signal and thus opposes it.
- Negative feedback reduces gain of the amplifier. It also reduce distortion, noise and instability.
- This feedback increases bandwidth and improves input and output impedances.
- Due to these advantages, the **negative feedback is frequently used in amplifiers.**





# Types of Feedback

## Negative Feedback





# Types of Feedback

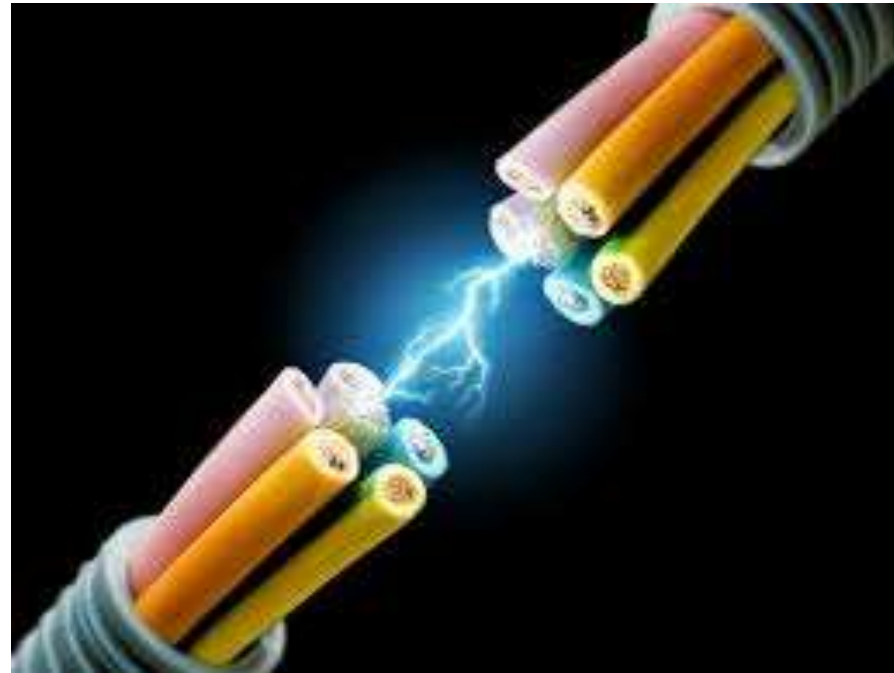


Negative Feedback	Positive Feedback
<ul style="list-style-type: none"><li>•Feedback energy is <b>out phase</b> with their input signal</li><li>•Gain of the amplifier decreases</li><li>•Gain stability increases</li><li>•Noise and distortion decreases.</li><li>•Increase the band width</li><li>•Used in <b>Amplifiers</b></li></ul>	<ul style="list-style-type: none"><li>•Feedback energy is <b>in phase</b> with the input signal.</li><li>•Gain of the amplifier increases</li><li>•Gain stability decreases</li><li>•Noise and distribution increases.</li><li>•Decreases bandwidth</li><li>•Used in <b>Oscillators</b></li></ul>





# RECAP....



# ...THANK YOU

