**B.Sc. (H) Physics IV Semester**

**UPC- 32221403**

**Paper Name – Analog Systems and Applications**

**Topic – RC Coupled Amplifier and its Frequency Response (4 lectures)**

1. Understanding the working of Single Stage Common Emitter Amplifier:

Click on: <https://youtu.be/1SX75vWfQNw>

1. Frequency response of Single Stage Common Emitter Amplifier:

Click on: <https://youtu.be/hFlyThTeff0>

1. Working of Two Stage RC Coupled Amplifier:

Click on: <https://youtu.be/WO0cTfg5B_Q>

The frequency response of two stage amplifier is as follows. The roll off (or cut off) frequencies are marked at the 3dB gain (i.e. 70% of maximum gain).



**Important characteristics of an RC coupled amplifier:**

1. Used as an audio frequency (AF) amplifier
2. It has a wide bandwidth
3. Flat output with very less distortion
4. Low gain at lower frequencies is due to coupling capacitors.
5. Low gain at higher frequencies is due to wiring capacitances and short circuited shunt capacitances.

**Advantages:**

1. Inexpensive coupling method using only capacitor.

2. Large bandwidth.

3. Low distortion, flatter region.

4. Q point and DC bias conditions do not change.

**Disadvantages:**

1. As the gain reduces in LF/HF range, it can't be uses to amplify low/high frequencies.

2. Overall less gain (because of wide BW)

3. Low impedance matching

4. Becomes noisy with age.

**Applications:** RC coupled amplifiers are used in

1. Tape Recorders

2. TV, VCR, CD player

3. Stereo Amplifier

4. AF Amplifiers

-Dr Shivani Agarwal