



POGIL TASK ON: Two stage RC-coupled Amplifier

FACULTY INFORMATION: G. Swarnalatha

Batch no:	Date:
Team Role	Team Member Name
Recorder: records all answers & questions, and provides copies to team & faculty.	P. Rahul
Speaker: talks to faculty and other teams.	Priyanka Reddy
Manager: keeps track of time and makes sure everyone contributes appropriately.	Srinitha
Other:	

Learning Objectives:

- To Find Increased Gain & Bandwidth of an Amplifier
- To Obtain the frequency response of the two-stage RC-coupled Amplifier.
- To verify the values theoretically & practically

Introduction: This is the most popular type coupling as it provides excellent audio fidelity. A coupling capacitor is used to connect output of first stage to input of second stage. Resistances R_1, R_2, R_3 form biasing and stabilization network for Q_1 & R_7, R_8 & R_9 for Q_2 . Emitter bypass capacitor offers low reactance path to signal. Coupling capacitor transmits AC signal & blocks DC. Then overall gain is increased.

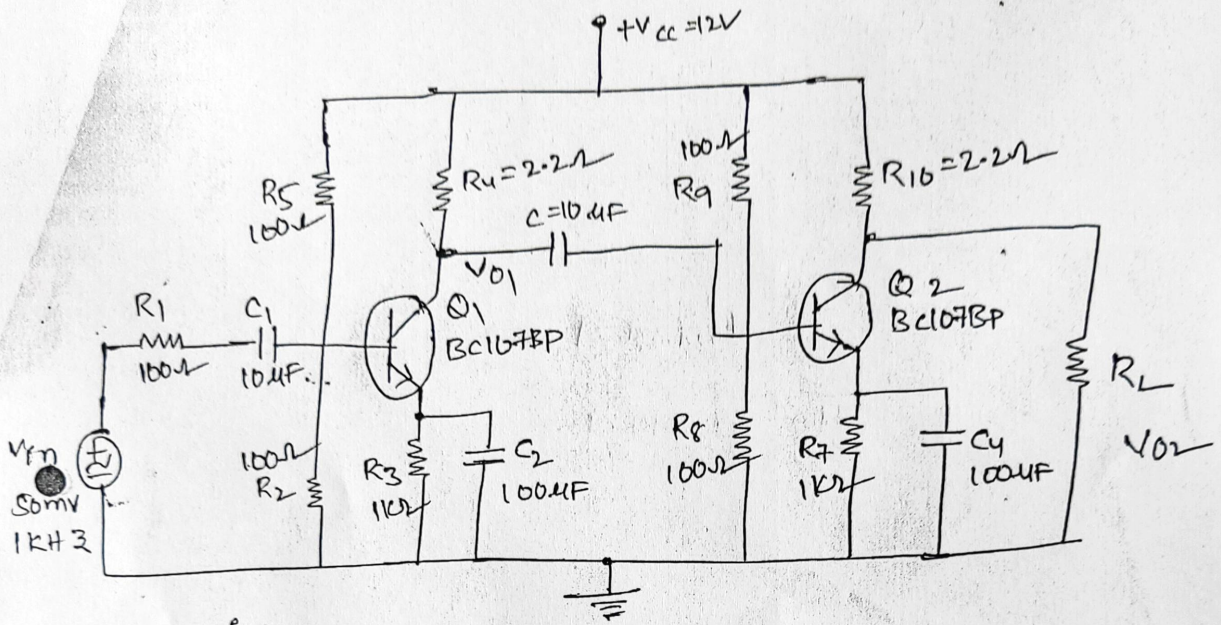
Procedure to solve:

- 1) Start TINA Software. A Blank circuit window will appear on the screen along with a component tool bar.
- 2) Using component tool bar, place all the components on the circuit window and wire the circuit.
- 3) connect the circuit as shown in the circuit diagram.

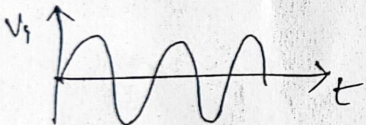
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- 4) Apply the input 10mv peak-to-peak and 1KHz frequency sinusoidal, using AC voltage source.
- 5) From drop down menu select transient analysis options.
- 6) Input and output waveforms will be displayed. Measure the output voltage V_o (P-P) both at the first stage and second stage.
- 7) To Find frequency response select AC analysis from drop down menu. calculate, Bandwidth and Gain in the Response displayed.

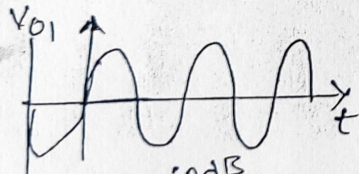
Design or coding:



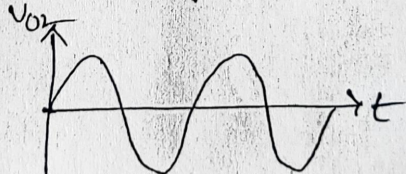
Input wave form



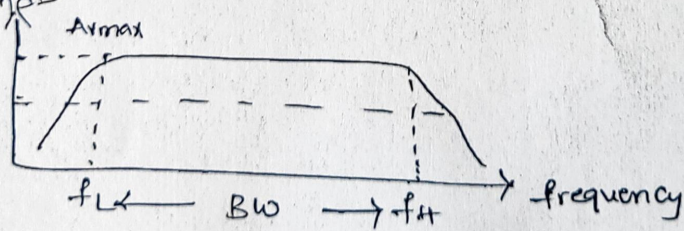
First stage output



Second stage o/p



Results: Gain in dB



Gain = 80

Bandwidth = 10KHz

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