Exp. No.:   Date :
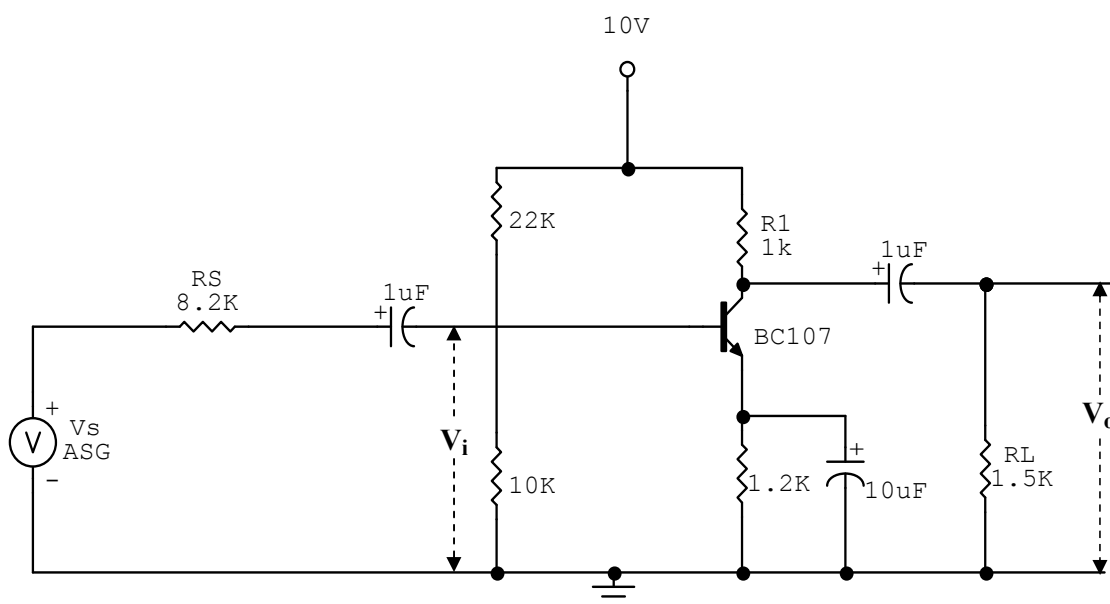
CE AMPLIFIER

AIM : To determine Bandwidth, Input &Output impedances, voltage gain, current
gain and   power gain of the CE Amplifier.

APPARATUS :

S.No.	Name of the Apparatus	Range	Quantity
1.	BC107	-	1No.
2.	Power Supply	0-30V	1No.
3.	Resistors (Ω)	8.2K, 22K 10K, 1.5K & 1K	Each 1No.
4.	Capacitors(F)	10 μ,	1No.
		1μ	2No.
5.	CRO	-	1No.

CIRCUIT DIAGRAM:

PROCEDURE:

1. Connect the circuit as shown in figure.

2. Apply the biasing voltage of 10 V.

3. Adjust the Signal generator voltage so as to get V_i =40mV and measure V_s.

4. Vary the frequency of the signal generator from 100Hz to 1MHz, in steps and note
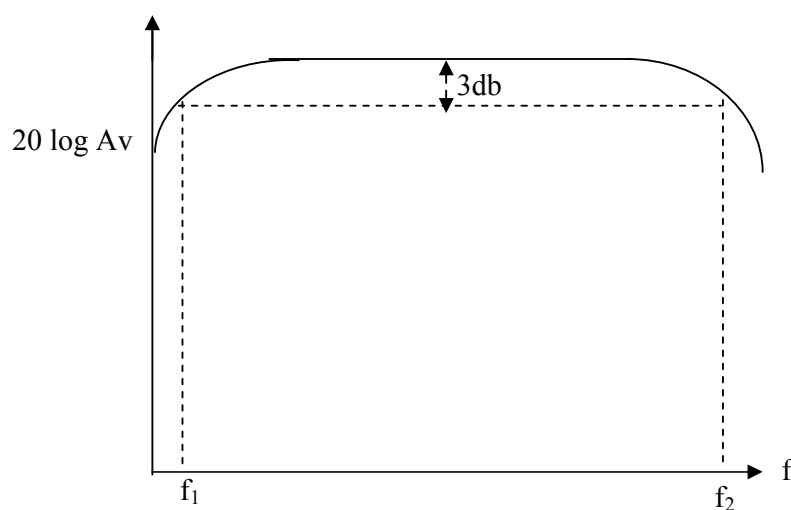down corresponding output voltage.

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5. In the mid band range remove R_L and note down the output which is V_{NL}.

6. Plot the frequency response and determine the bandwidth.

7. Calculate the input and output impedance in the mid band range using

$$R_i = \frac{V_i R_S}{V_S - V_i} \quad =$$

$$R_O = \frac{V_{NL} - V_{FL}}{V_{FL}} \times R_L =$$

8. Calculate the current gain(A_I), voltage gain(A_V) and power gain(A_P) using

$$A_I = \frac{I_O}{I_i} =$$

$$I_O = \frac{V_O}{R_O} =$$

$$A_V = \frac{V_O}{V_i} =$$

$$I_i = \frac{V_s - V_i}{R_s} =$$

Power gain (A_P) = A_V. A_I =

TABULATION :

$V_S=$ $V_{NL} =$

S No.	Frequency (Hz)	V_i (mV)	V_o (V)	$A_V = \dfrac{V_o}{V_i}$	20 log A_V

Exp. No.:   Date :

S No.	Frequency (Hz)	V_i (mV)	V_o (V)	$A_V = \dfrac{V_o}{V_i}$	20 log A_V

MODEL GRAPH:

$$\text{Bandwidth} = f_2 - f_1 =$$

RESULTS: Input impedance(R_i)   =

                 Output impedance(R_o)   =

                 Current gain(A_i)   =

                 Voltage gain(A_v)   =

                 Power gain(A_P)   =

                 Bandwidth   =