



Department Of electrical and computer Engineering
ENEE2103 CIRCUITS AND ELECTRONICS LABORATORY

Experiment No.9 Prelab

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Date: 24/Oct/2021

A:

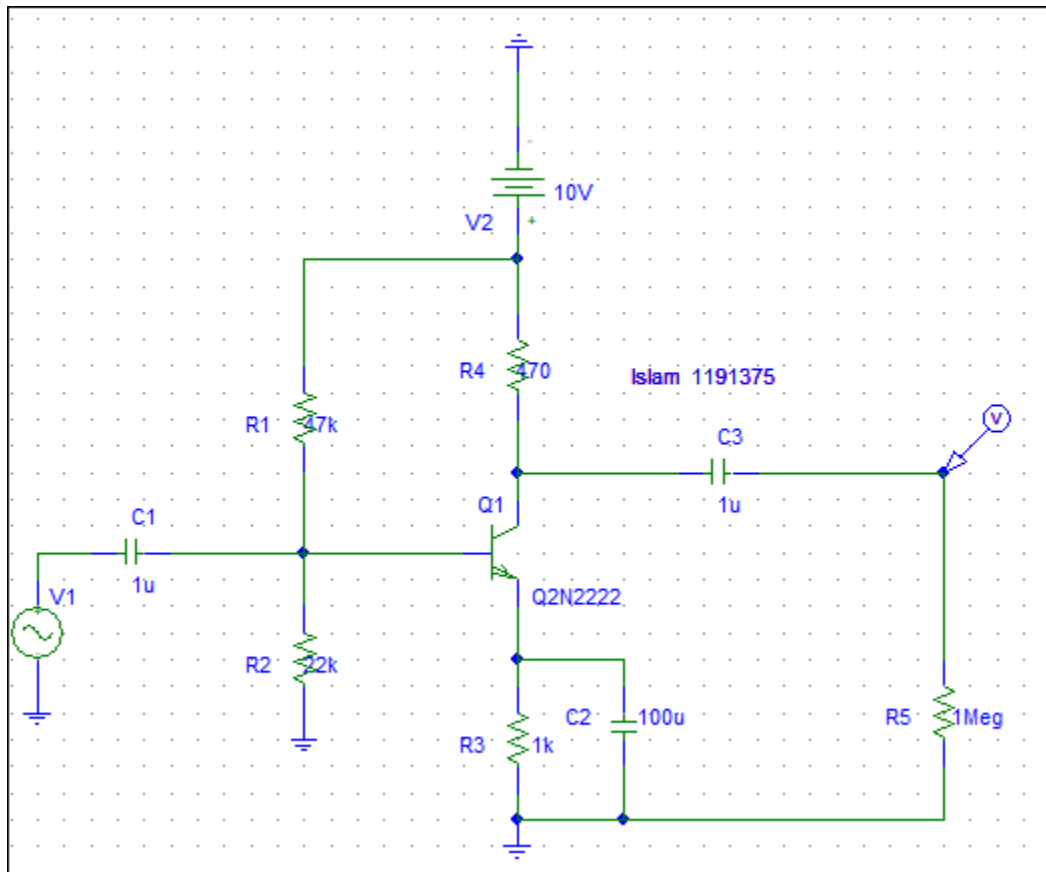


Fig 1.9(first Amplifier stage)

$$V_B = 2.986 \text{ V}$$

$$V_E = 2.321 \text{ V}$$

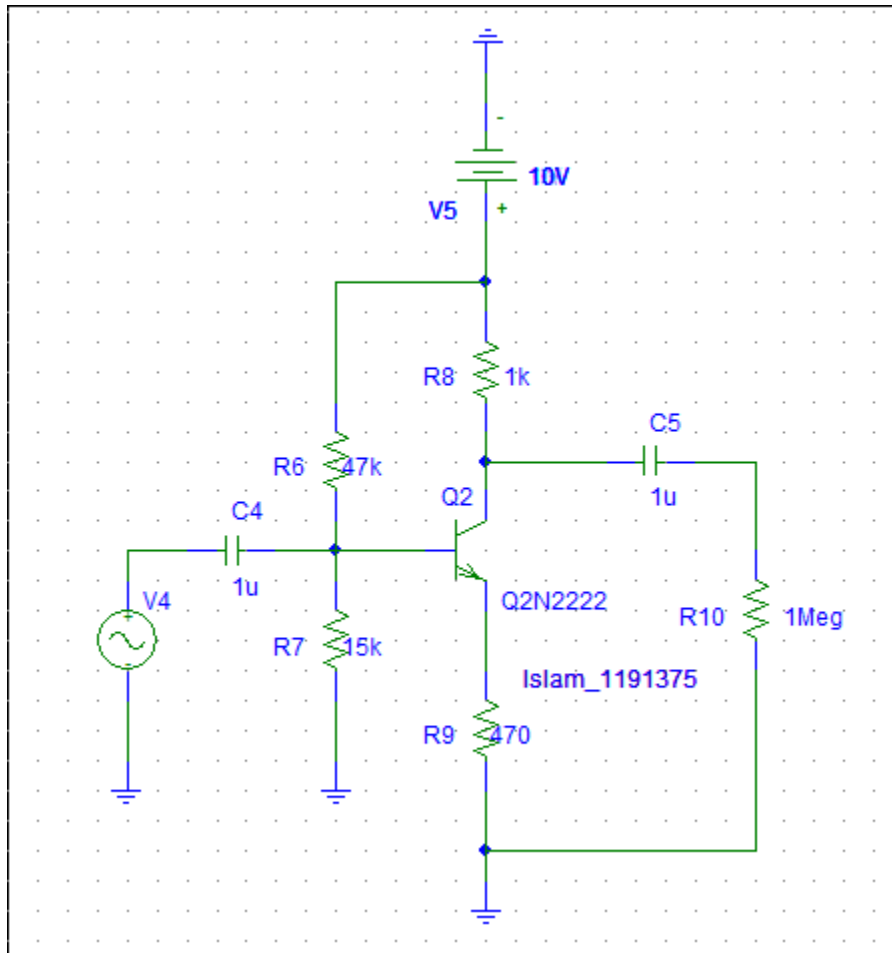
$$V_C = 8.916 \text{ V}$$

$$I_B = 13.51 \text{ uA}$$

$$I_C = 2.3069 \text{ mA}$$

$$A_{v1} = V_{o1} / V_i = 361.235\text{m} / 10\text{m} = 36.12375$$

B



$$V_C = 6.762V$$

$$V_E = 1.531V$$

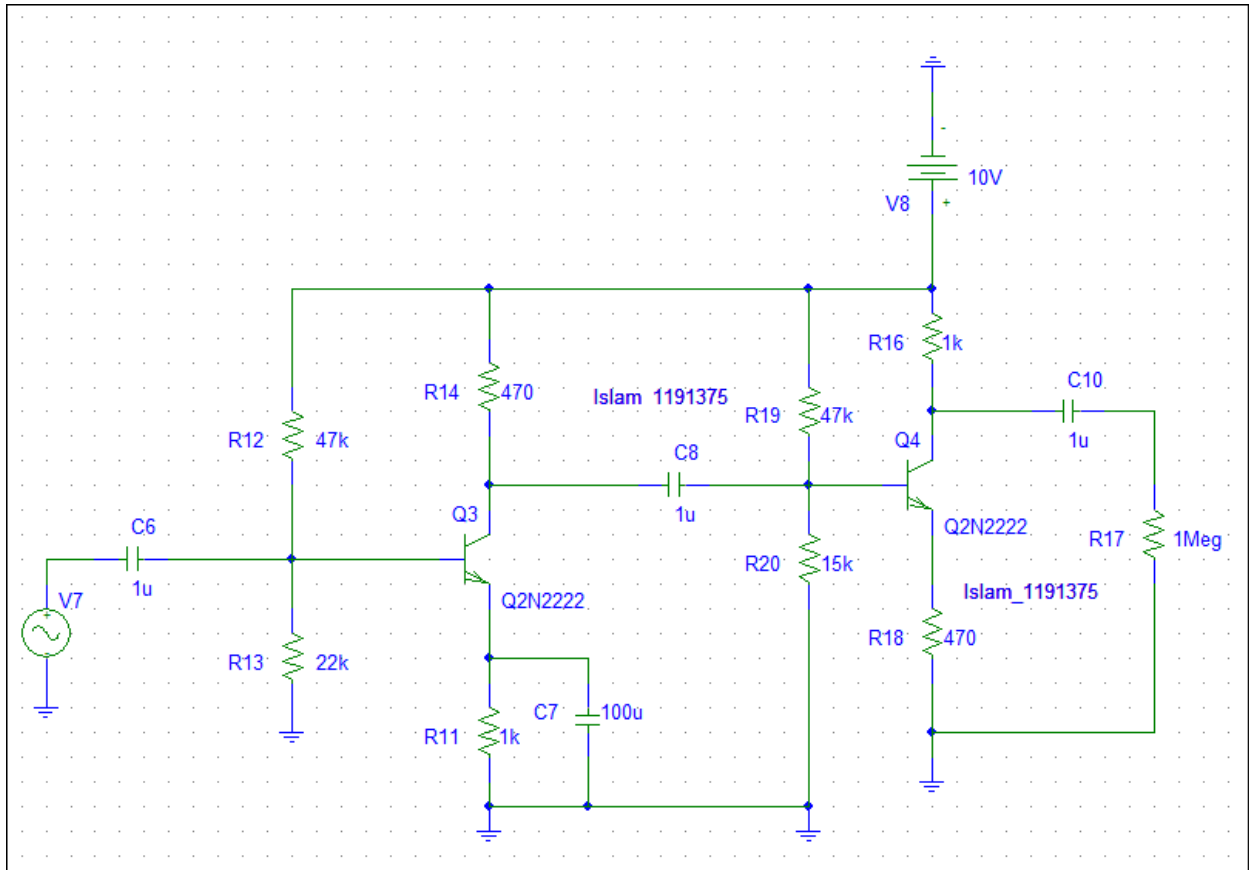
$$V_B = 2.206V$$

$$I_B = 18.77\mu A$$

$$I_C = 3.238mA$$

$$A_{v2} = V_{o1} / V_i = 525.345m / 250m = 2.10138$$

C



VC1 = 8.916 V

VE1 = 2.320 V

VB1 = 2.986 V

IB1 = 13.51 μ A

IC1 = 2.307 mA

VC2 = 6.762 V

VE2 = 1.531 V

VB2 = 2.206 V

IB2 = 18.77 μ A

IC2 = 3.238 mA

$A_v = V_o / V_i = 846.407\text{m} / 10\text{ m} = 84.6407$

D

vars	Bjt#1	Bgt#2	Av1 & Av2 together	
			Bjt#1	Bgt#2
VB	2.987V	2.208V	2.986V	2.207V
VC	8.914V	6.76V	8.916V	6.76V
VE	2.33V	1.529V	2.32V	1.53V
IC	2.307mA	3.238mA	2.307mA	3.238mA
IB	13.513uA	18.774uA	13.15uA	18.77uA

the values are the same for BJT1 and BJT 1 in Av1 & Av2 together

the values are the same for BJT2 and BJT2 in Av1 & Av2 together

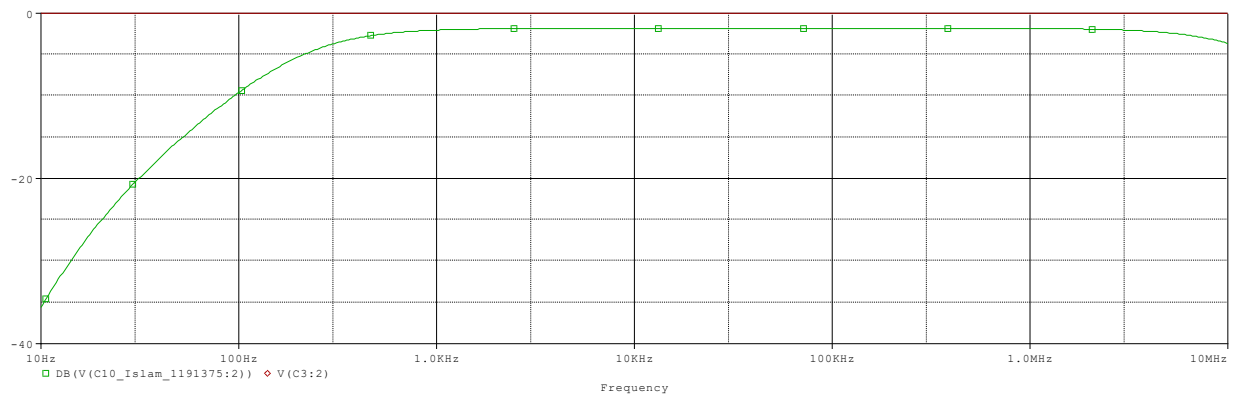
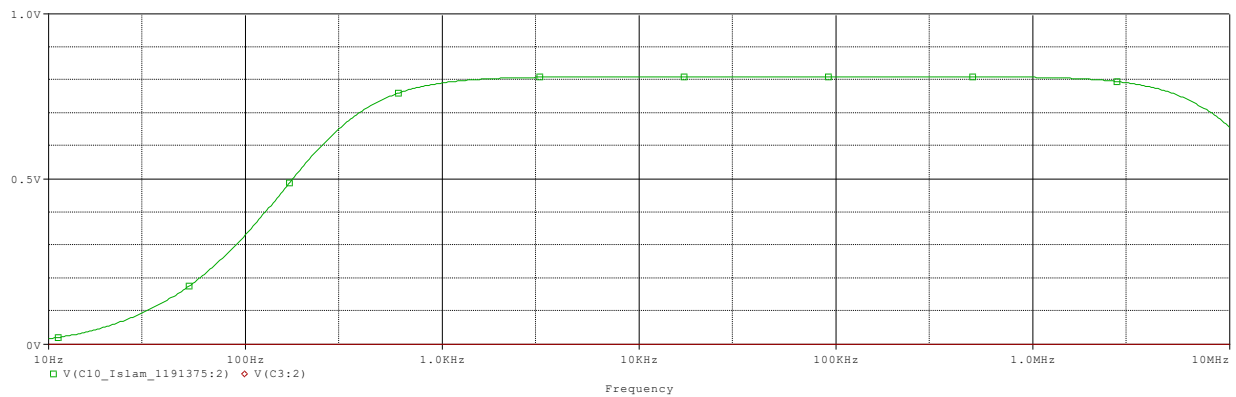
E

Av (obtained in C) = 84.64

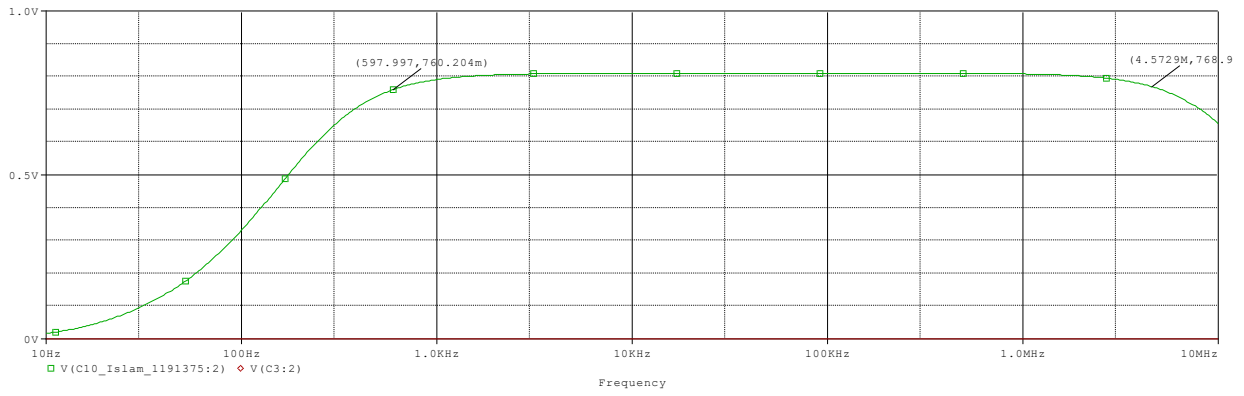
Av1 * Av2 = 2.10138 * 36.1237 = 75.9

F

ac sweep and frequency response in dB for frequency range 10Hz-10MHz



G



FL= 760.204m

FH= 768.988m