

Department Of electrical and computer Engineering

ENEE2103 CIRCUITS AND ELECTRONICS LABORATORY

Experiment No.9 Prelab

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A:



Fig 1.9(first Amplifier stage)

VB = 2.986 V

VE = 2.321 V

VC = 8.916 V

IB = 13.51 uA

IC = 2.3069 mA

Av1 = Vo1 / Vi = 361.235m / 10m = 36.12375

B



VC = 6.762V

VE = 1.531V

VB = 2.206V

IB = 18.77uA

IC = 3.238mA

Av2 = Vo1 / Vi = 525.345m / 250m = 2.10138

C



VC1 = 8.916 V

VE1 = 2.320 V

VB1 = 2.986 V

IB1 = 13.51 uA

IC1 = 2.307 mA

VC2 = 6.762 V

VE2 = 1.531 V

VB2 = 2.206 V

IB2 = 18.77 uA

IC2 = 3.238 mA

Av = Vo / Vi = 846.407m / 10 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