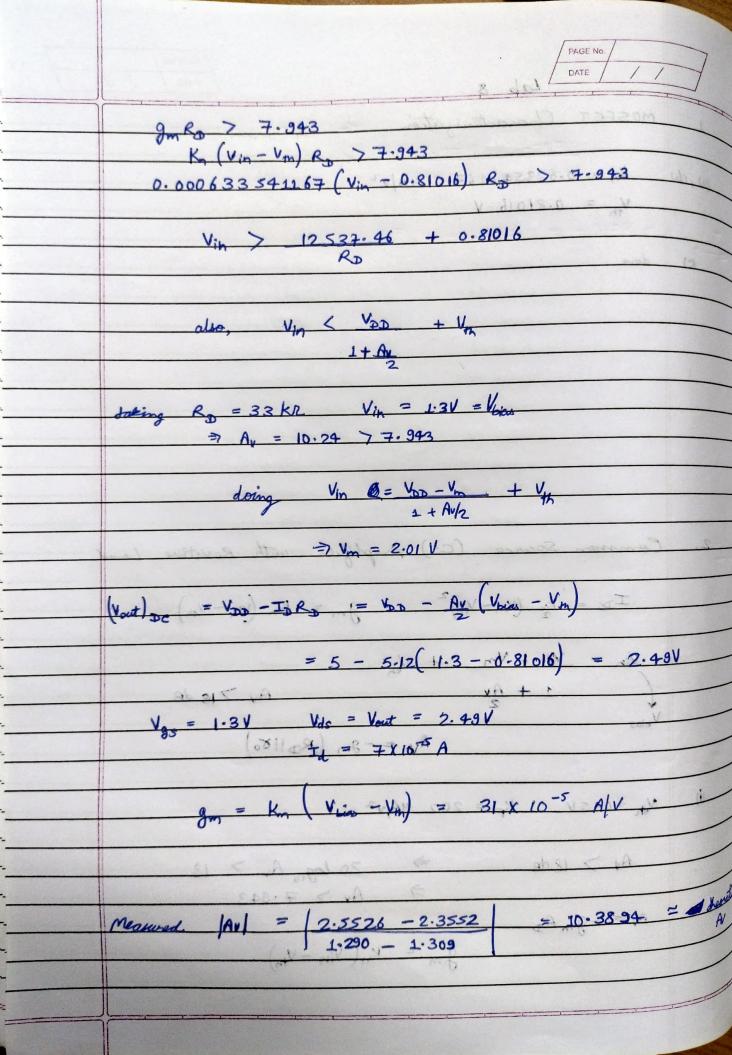
	Lab 8	
	Lab 8	
1.	MOSFET Characterization	
	KIV-Vate Control	
(a), (b)	Ky = 0.6335411671014A/V2	
	V = 0.81016 V	
	V > 10524-46 + 0.81016	
(c)	dore	
	all + day > (ill out	
	W+1	
	way Re = 12 Vi = 12 Vi	
	F48. F ( 40.0) = A F	
		101
	delic Very De Very + Very	
	deling the de has - he + he	
2.	Common Source (CS) Amplifier with Resistive Load	
	In = Kn (Vin-Vm) 2 - gm = Kn-(Vin-Vm)	
V	Vin = VH + Vm + Vm	
	1 + Av Av 718 dB	
	Volas VRA C = toV = 1W VE-1 = V	
	No Av. = - 2m (Roo 1180)	
(i)	Vm =0.5V Kp = 200 4A/v2	
	Ay > 18 de => 20 log (6 Ay > 18	
	⇒ Av > 7.943	
- 3		
NA.	Av==gmRD	
	gm = Kn (Vin - Vth)	

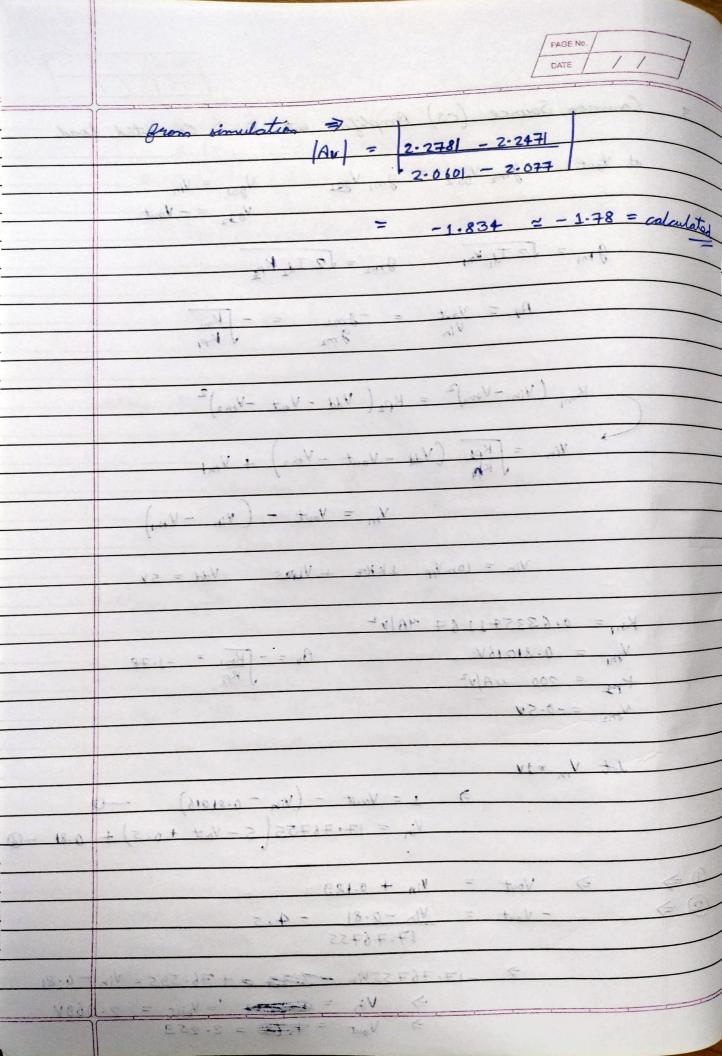


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3.	Common Source (CS) Amplifier with Diode Connected load
	at Vout ginz gsz gm, Vgs = Vin
alastat	251 - Wort - Vost
	9 m2 = 12 Id Kg
	$Ay = V_{out} = -g_{m_1} = -\int K_{m_1}$ $V_{in} \qquad g_{m_2} \qquad \int K_{p_1}$
	$\left(\frac{V_{in}-V_{sm}}{2}\right)^{2}=K\rho_{2}\left(\frac{V_{dd}-V_{ext}-V_{sm}}{2}\right)^{2}$
	Vin = Kos (Vdd - Vout - Vm2) + Vm1
	V <sub>m</sub> = V <sub>out</sub> - (V <sub>in</sub> - V <sub>thi</sub> )
	Vin = lon Vpp 1KNZ + Vhins Vdd = 5v
	Km = 0.633541167 4A/V2
	$V_{m_1} = 0.81016V$ $A_V = -\sqrt{K_{m_1}} = -1.78$ $K_{m_2} = 200 \text{ uA/V}^2$
	V <sub>th2</sub> = -0.5V
	lot Vm = 14
	$\frac{3}{1} = V_{\text{out}} - \left(V_{\text{in}} - 0.81016\right) - 0$ $V_{\text{in}} = 17.76755\left(5 - V_{\text{out}} + 0.5\right) + 0.81 - 0$
① <del>=</del>	
	> Vin = 2.069V

7

Vout = = 2.259



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4 Current Misson (cm) dairgn

Vdd = 8V IRA = 2mA

I = Km (Vgs - Vm)2

 $2x_{10}^{-3} = 633.54 \times 10^{-6} \left( V_{35} - 0.810 \right)^{2}$ 

> Vgs = 0.810 = 2.5128 => Vgs = 3-323V

Vasi = Vasi

VDSI = VDD - IRER

=> 3.373 = 8 - 2×10-3 R = 2333 €

Impy = Ind 3 V = 3.305