NOMBRE DEL ALUMNO:

Diego Moisés González Solís

CARRERA:

Ing. Mecatrónica

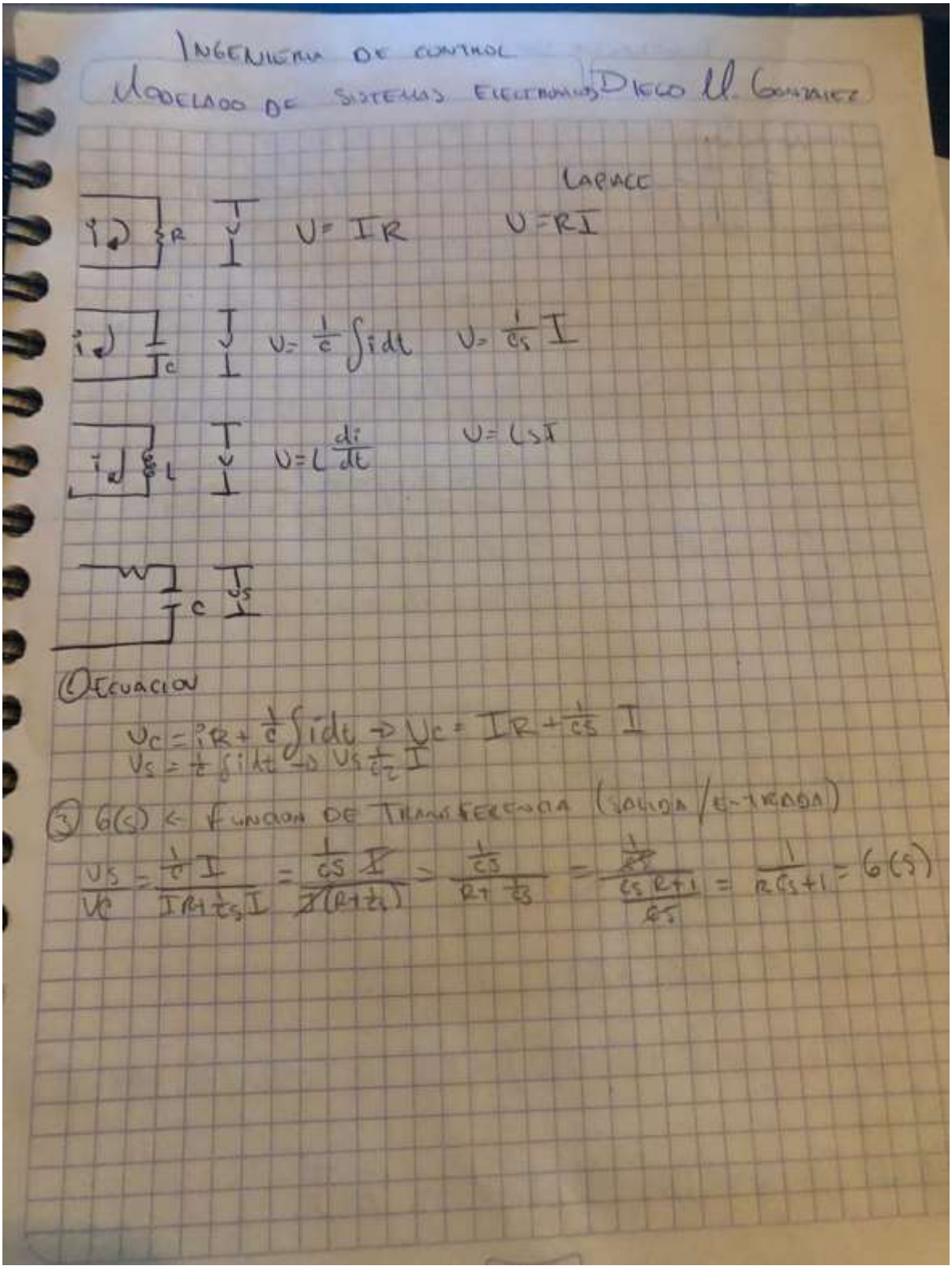
MATERIA:

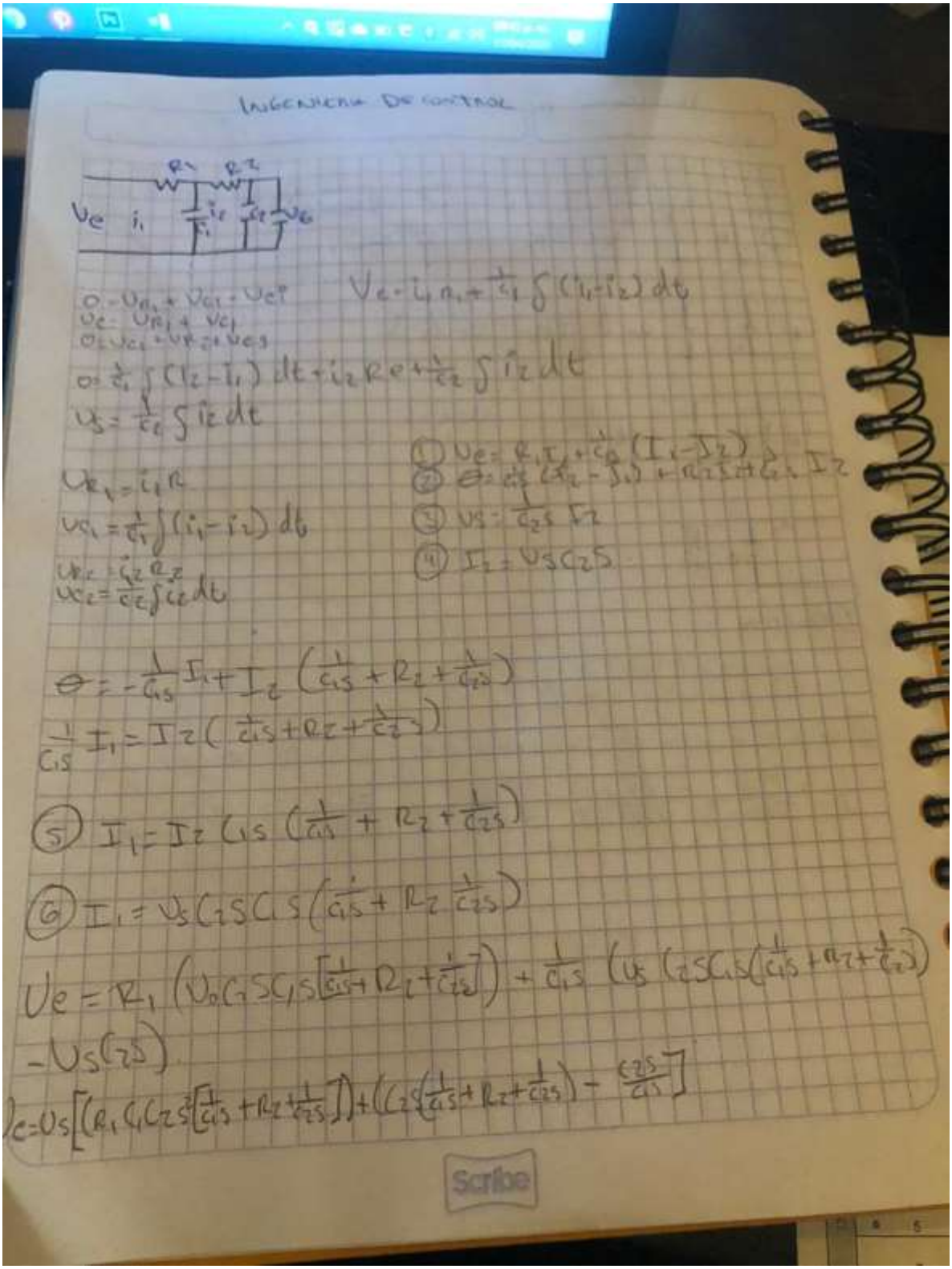
INGENIERIA DE CONTROL

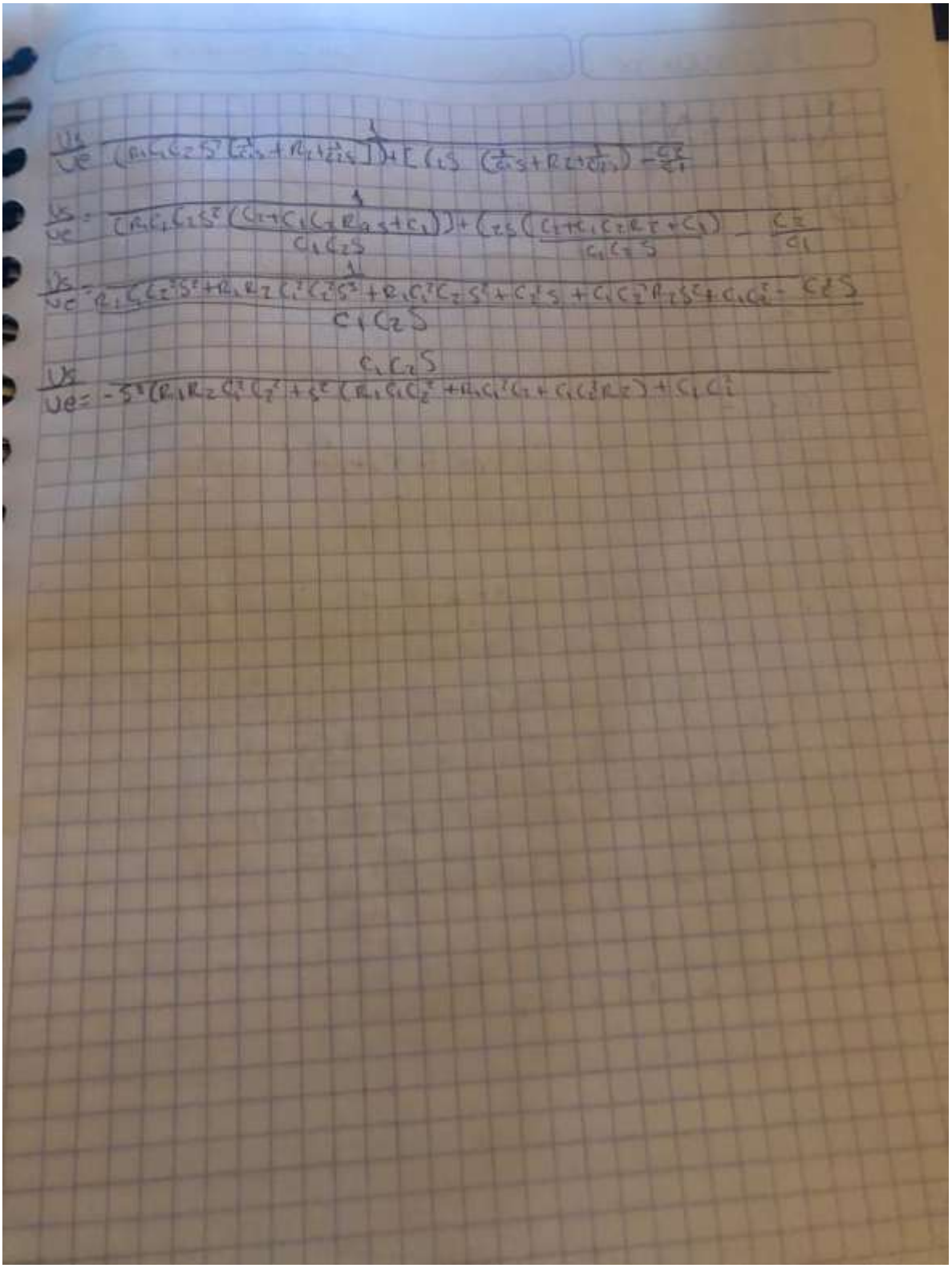
GRADO Y GRUPO:

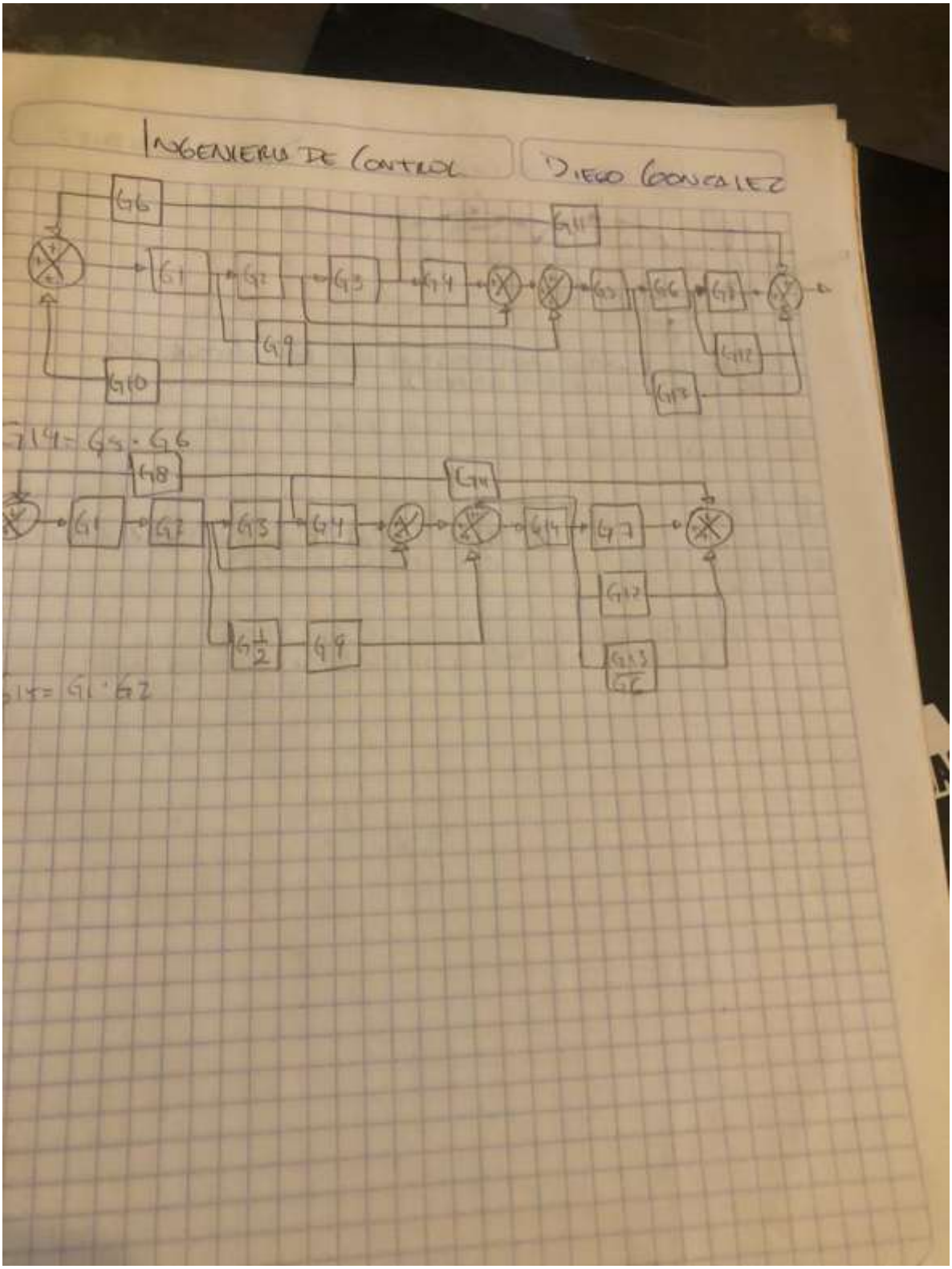
8°-B

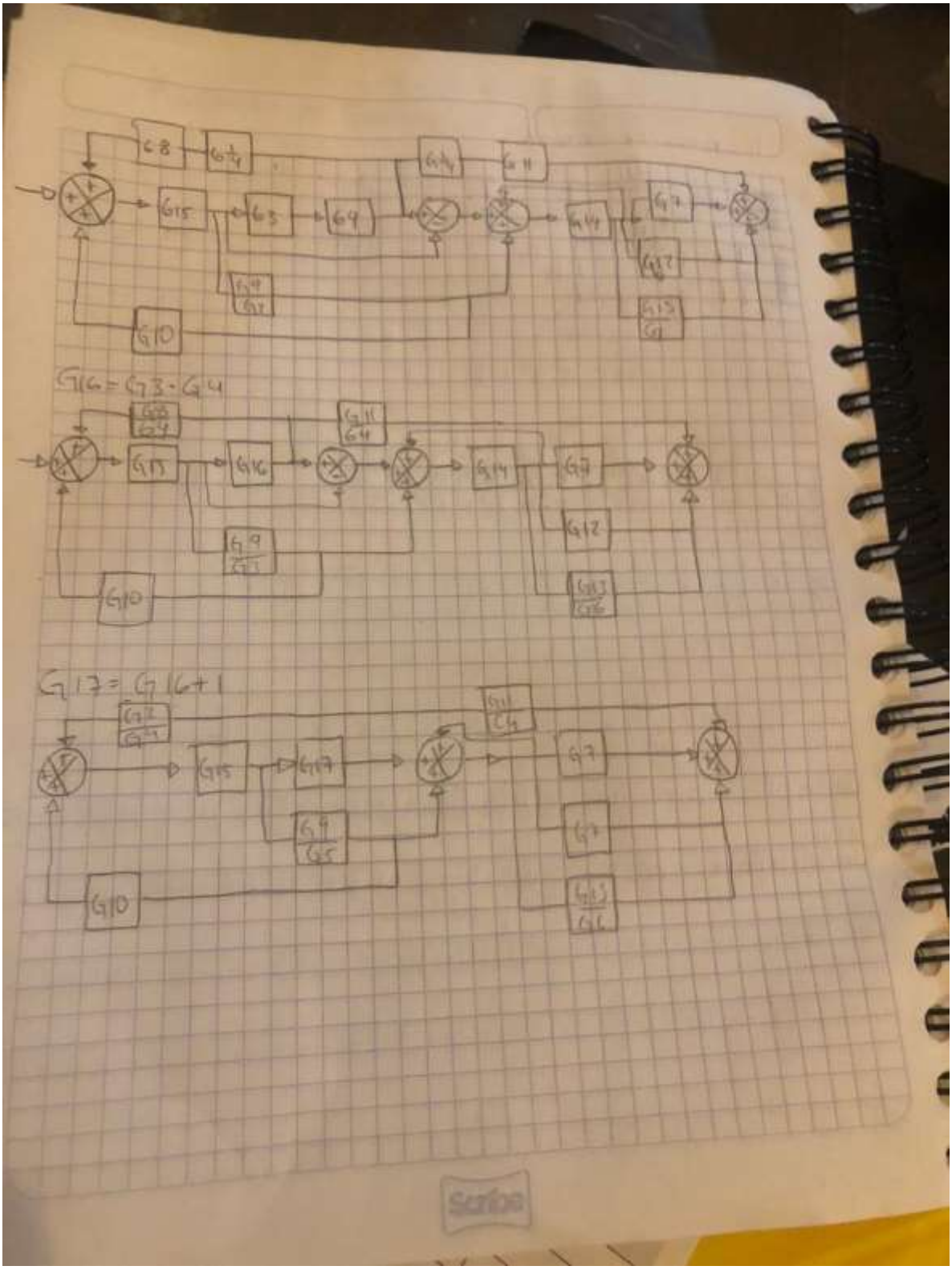
CUATRIMESTRE:
ENERO-ABRIL

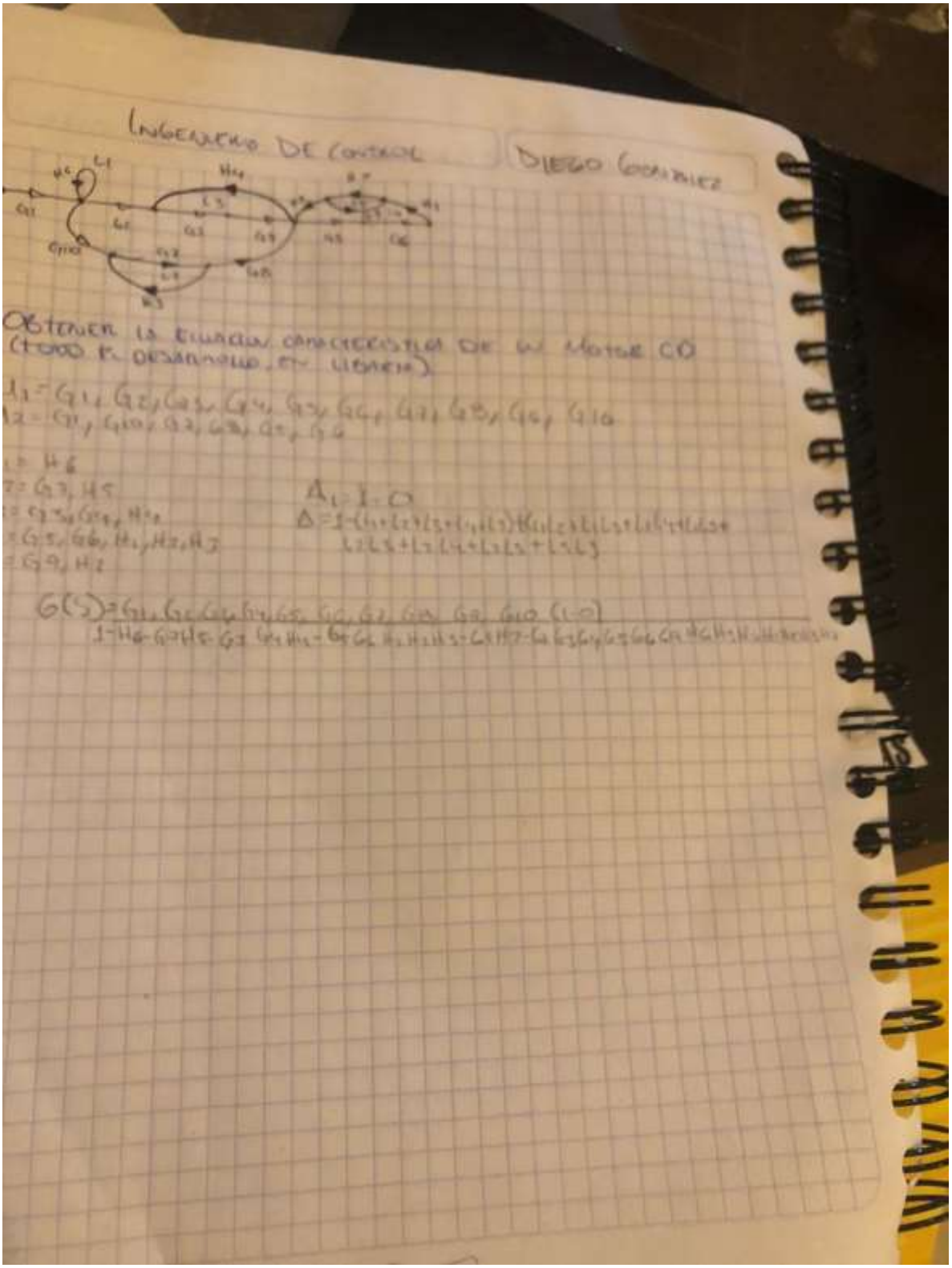

INGENIERIA DE CONTROL
MODELADO DE SISTEMAS ELECTRONICOS DIEGO U. GONZALEZ
LAPLACE
U = IR
U = RI
U = 1/C ∫ i dt
U = 1/Cs I
U = L di/dt
U = LsI
Ic
Vs
C
1) Ecuacion
Vc = iR + 1/C ∫ i dt → Vc = IR + 1/Cs I
Vs = 1/C2 ∫ i dt → Vs 1/C2 I
2) G(s) ← FUNCION DE TRANSFERENCIA (SALIDA / ENTRADA)
Vs/Vc = 1/C I / IR + 1/Cs I = 1/Cs I / I(R + 1/Cs) = 1/Cs / R + 1/Cs = 1/(Cs R + 1) = 1/R(Cs + 1) = G(s)

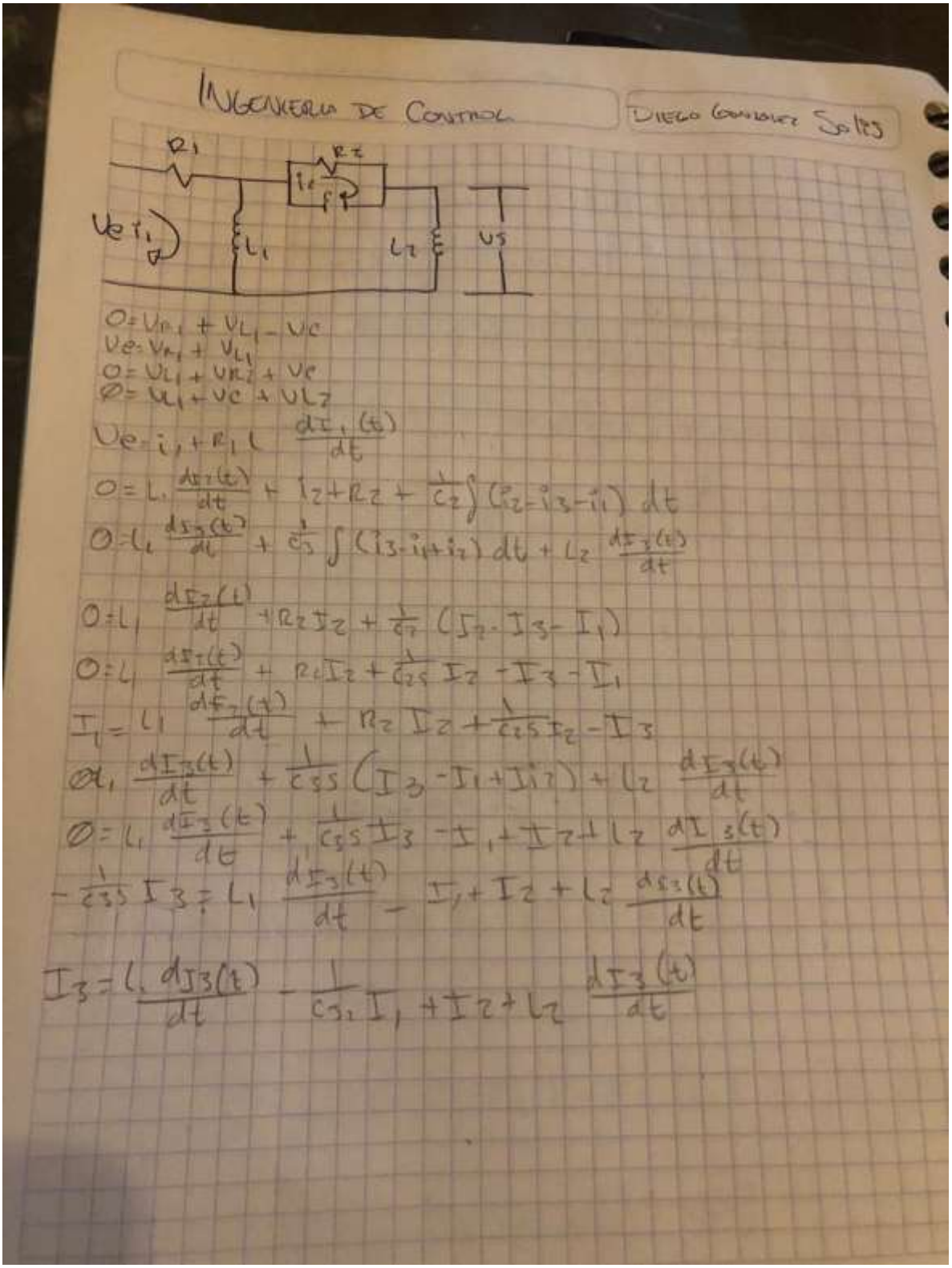

INGENIERIA DE CONTROL
Scribe



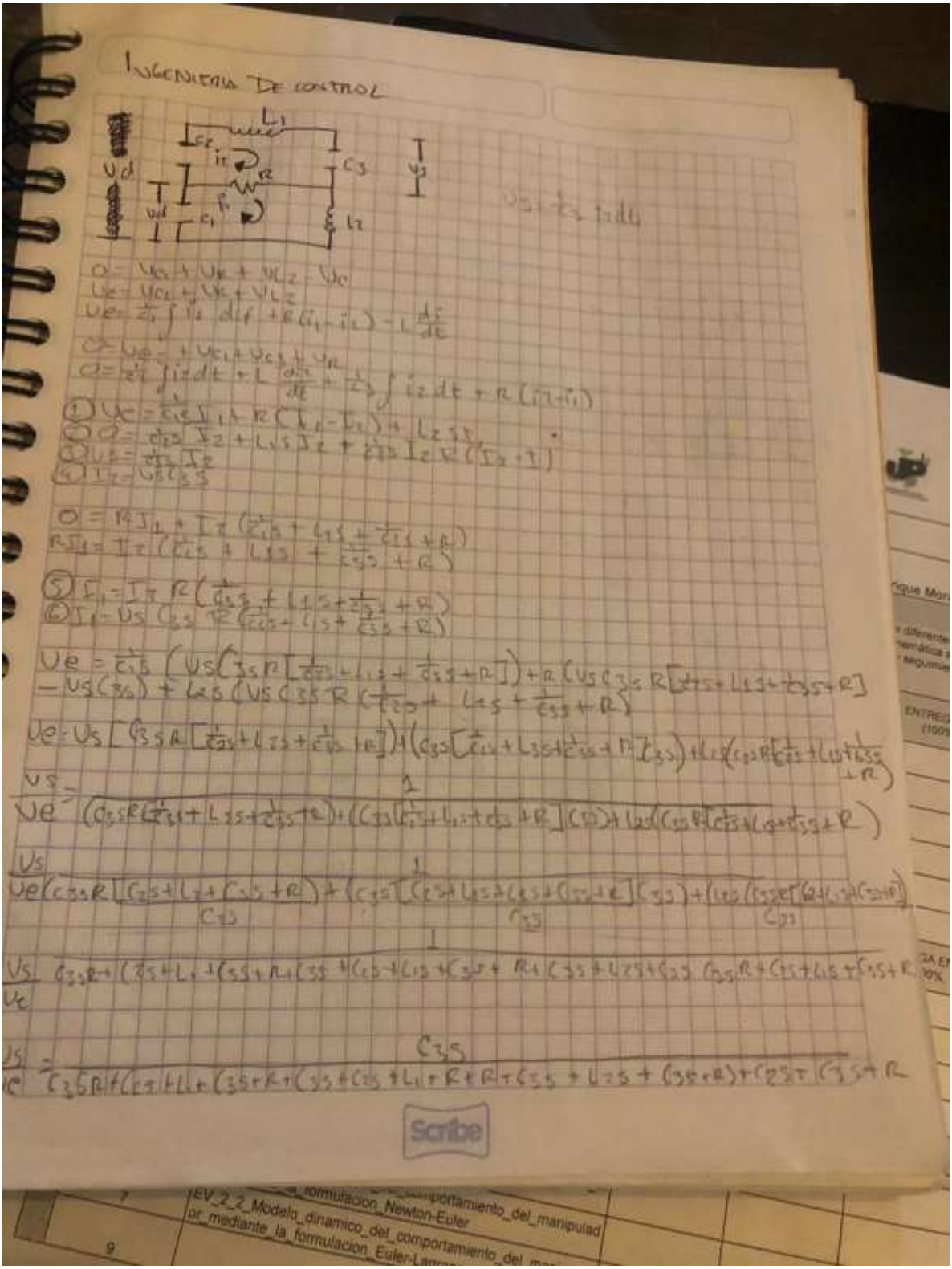

INGENIERIA DE CONTROL
DIEGO GONZALEZ
G6
G11
G1
G2
G3
G4
G5
G8
G9
G10
G12
G13
G14 = G5 · G6
G7
G1/2
G13/G2
G1 · G2


G16=G13-G14
G17=G16+1


INGENIERIA DE CONTROL
DIEGO GOMEZ
Obtener la ecuación característica de el motor CD
(todo el desarrollo en libreta)



$$0 = V_{R1} + V_{L1} - V_C$$
$$V_e = V_{R1} + V_{L1}$$
$$0 = V_{L1} + V_{R2} + V_e$$
$$0 = V_{L1} + V_C + V_{L2}$$
$$V_e = i_1 + R_1 \left(\frac{dI_1(t)}{dt} \right)$$
$$0 = L_1 \frac{dI_2(t)}{dt} + I_2 + R_2 + \frac{1}{C_2} \int (i_2 + i_3 - i_1)\, dt$$
$$0 = L_1 \frac{dI_3(t)}{dt} + \frac{1}{C_3} \int (i_3 - i_1 + i_2)\, dt + L_2 \frac{dI_3(t)}{dt}$$
$$0 = L_1 \frac{dI_2(t)}{dt} + R_2 I_2 + \frac{1}{C_2} (I_2 - I_3 - I_1)$$
$$0 = L_1 \frac{dI_2(t)}{dt} + R_1 I_2 + \frac{1}{C_2 s} I_2 - I_3 - I_1$$
$$I_1 = L_1 \frac{dI_2(t)}{dt} + R_2 I_2 + \frac{1}{C_2 s} I_2 - I_3$$
$$0 = L_1 \frac{dI_3(t)}{dt} + \frac{1}{C_3 s} (I_3 - I_1 + I_2) + L_2 \frac{dI_3(t)}{dt}$$
$$0 = L_1 \frac{dI_3(t)}{dt} + \frac{1}{C_3 s} I_3 - I_1 + I_2 + L_2 \frac{dI_3(t)}{dt}$$
$$-\frac{1}{C_3 s} I_3 = L_1 \frac{dI_3(t)}{dt} - I_1 + I_2 + L_2 \frac{dI_3(t)}{dt}$$
$$I_3 = L_1 \frac{dI_3(t)}{dt} - \frac{1}{C_3} I_1 + I_2 + L_2 \frac{dI_3(t)}{dt}$$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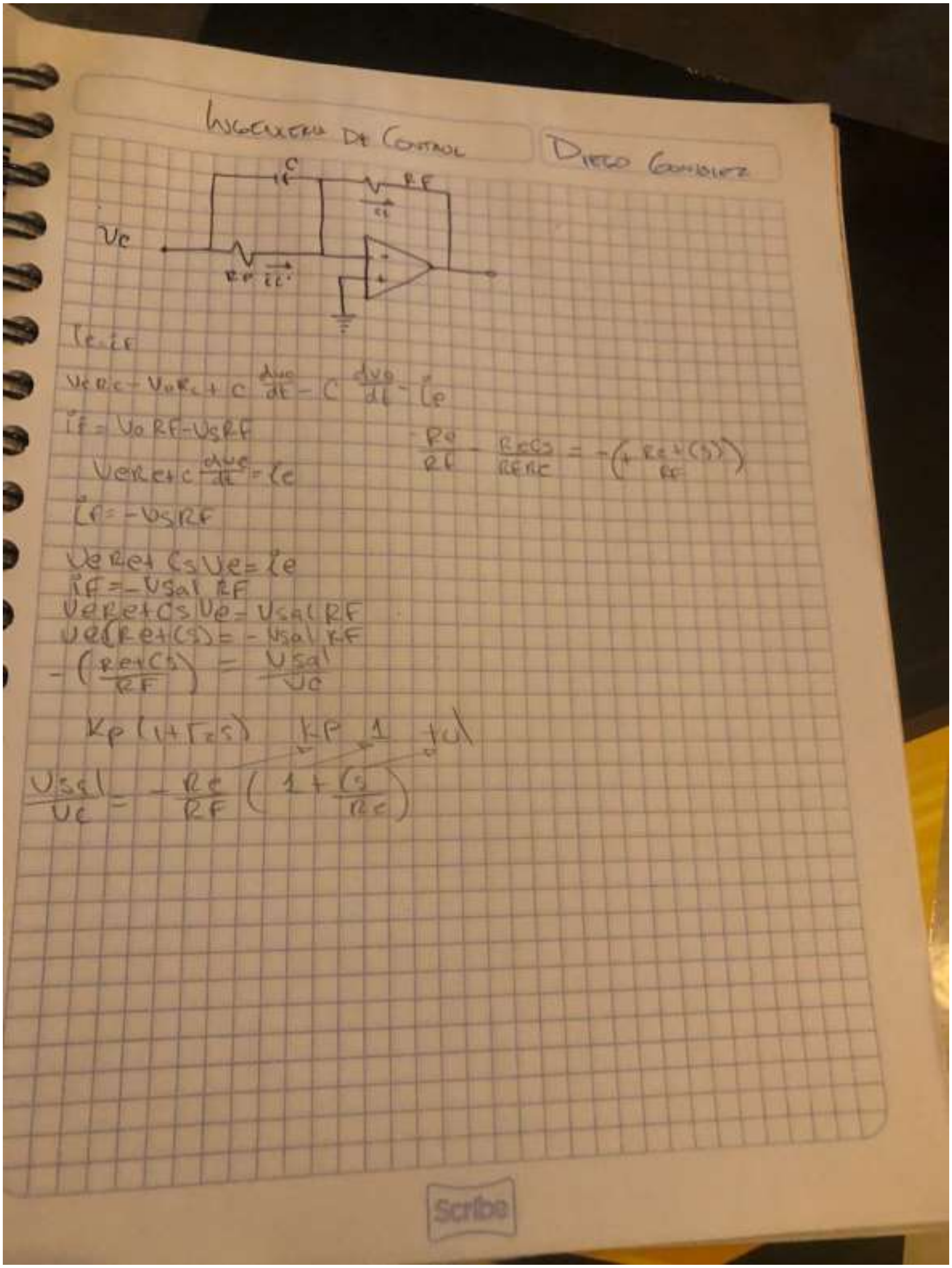
Ingenieria De Control
Diego Gonzalez
Vc
C
RF