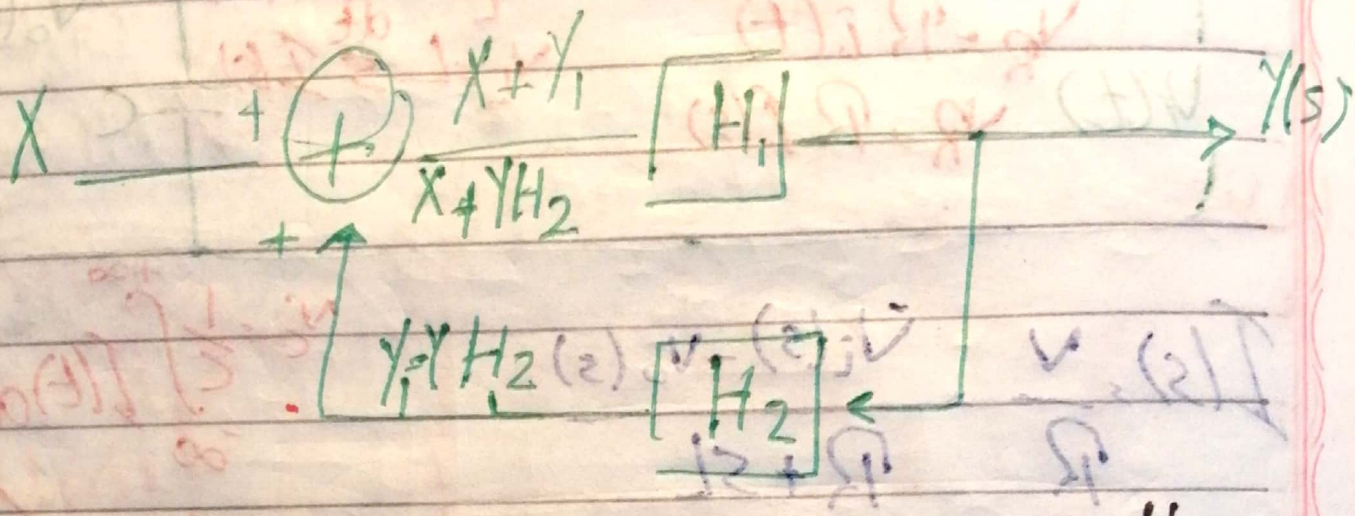
Subject:

Date: / /201

Lec 17

8/12

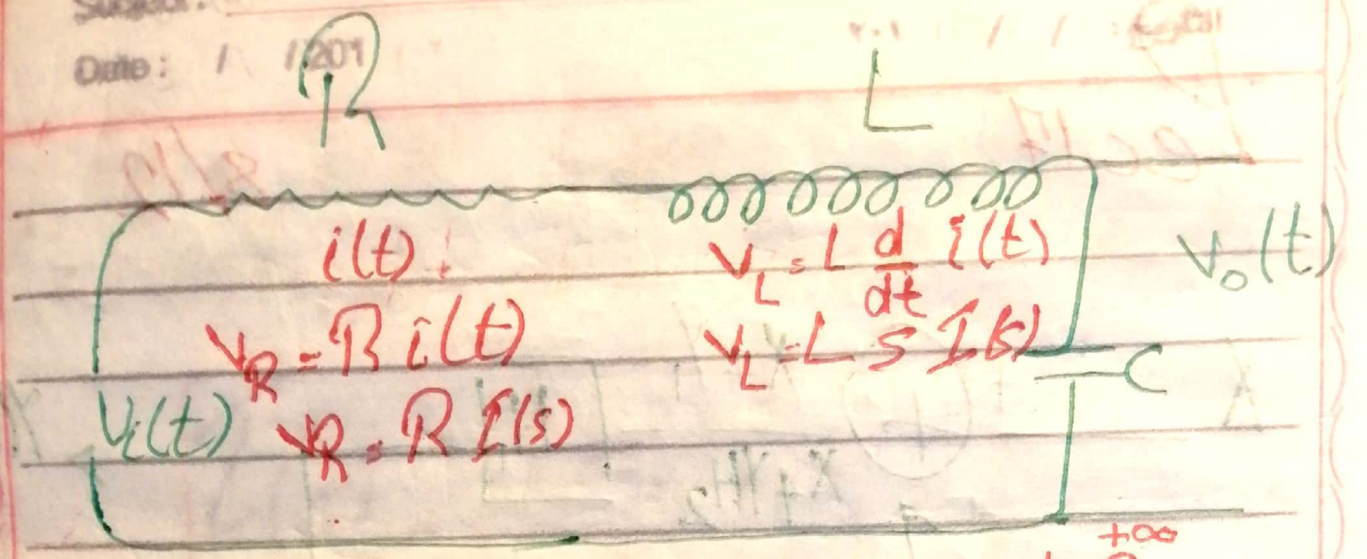


$$Y(s), H_1\{x + Y H_2\}$$

$$= H_1 x + H_1 H_2 Y$$

$$Y(1 - H_1 H_2) = H_1 x$$

$$\frac{H}{1 - H_1 H_2}$$

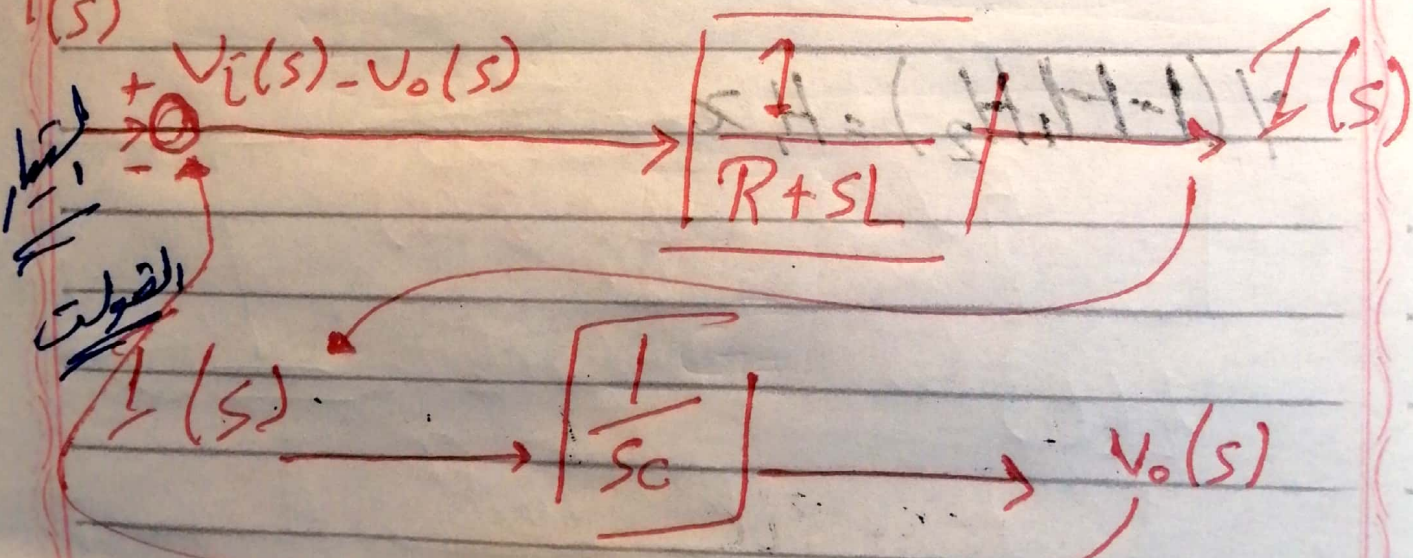


$$I(s) = \frac{V}{R} = \frac{V_i(s) - V_o(s)}{R + SL}$$

$$V_o(s) = \frac{1}{SC}\, I(s)$$

$$V_C = \frac{1}{C}\int_{-\infty}^{+\infty} I(t)\,dt$$

$$V_C = \frac{1}{C}\cdot\frac{1}{S}\cdot I(s)$$

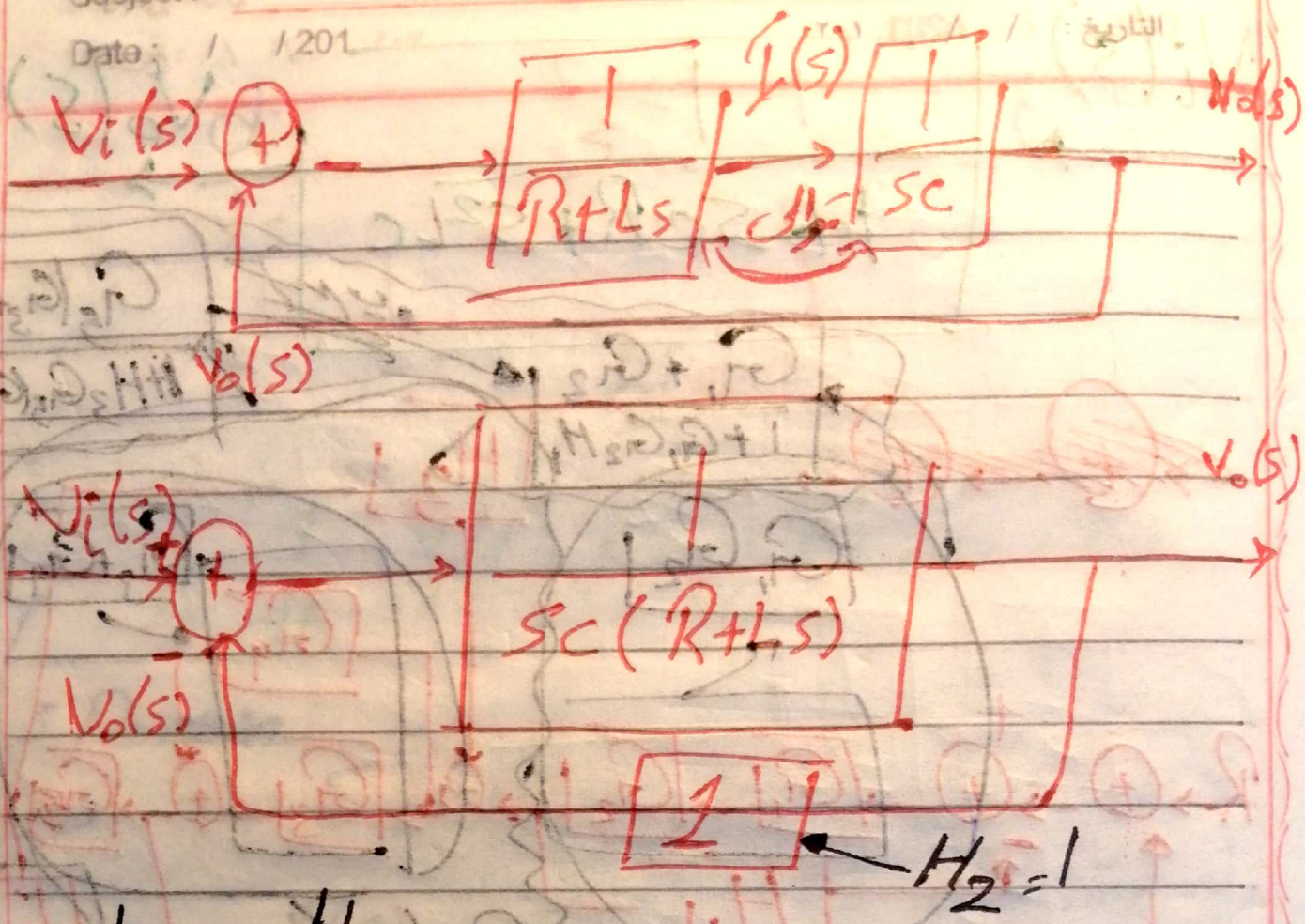


Subject :

Date : / /201

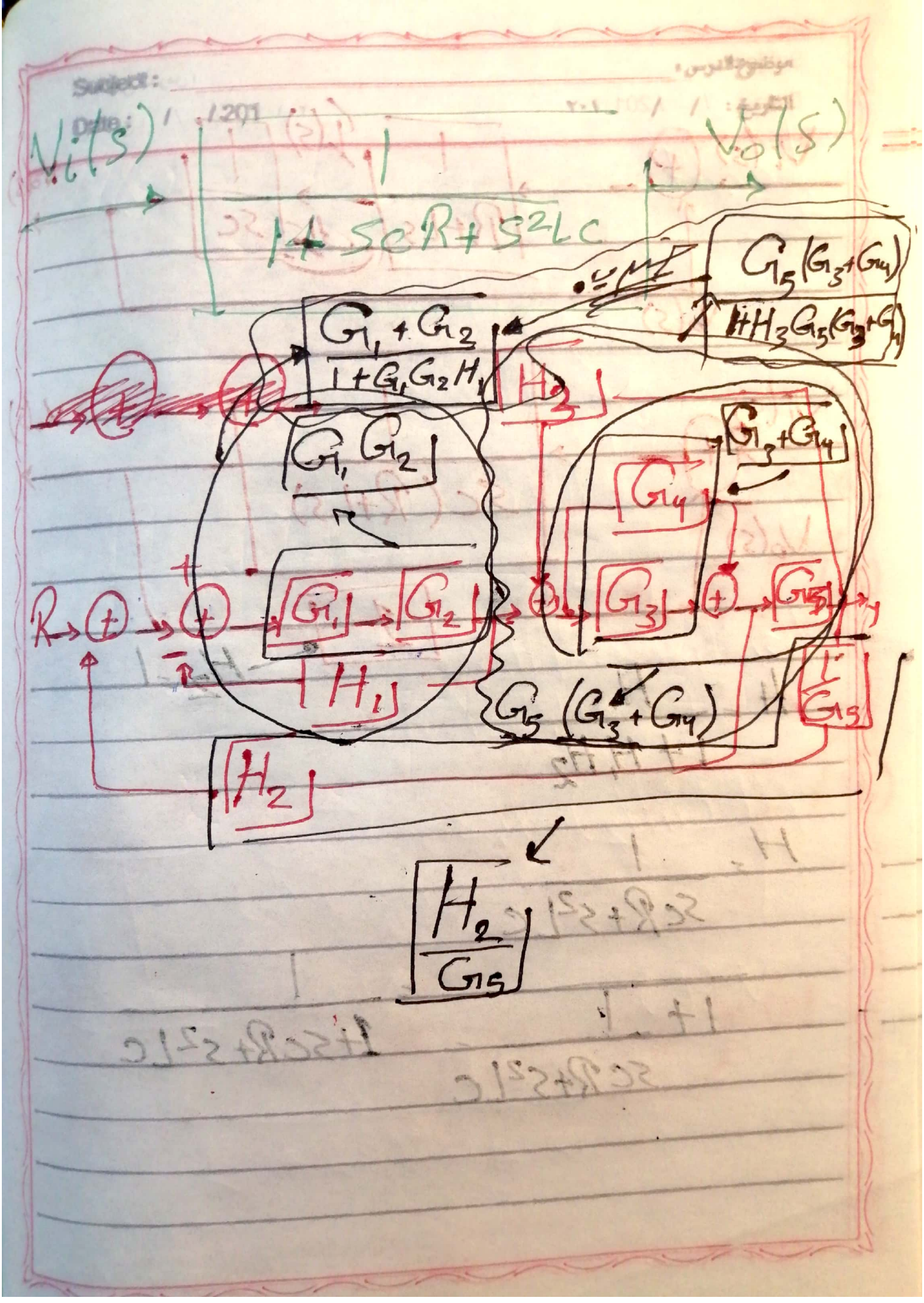
موضوع الدرس :

التاريخ : / /



$$H = \frac{H_1}{1 + H_1 H_2}$$

$$H = \frac{\frac{1}{scR + s^2LC}}{1 + \frac{1}{scR + s^2LC}} = \frac{1}{1 + scR + s^2LC}$$


Vi(s)
Vo(s)
1 / 1 + sCR + s²LC
G1 + G2 / 1 + G1G2H1
G1G2
G3 + G4
G4
G5 (G3 + G4)
1 + H3G5(G3 + G4)
H1
H2
H3
R
H2 / G5

Subject : موضوع الدرس :

Date : / / 201 التاريخ : / / ٢٠١

$\frac{d}{ds} \cdot s \rightarrow$

$s \cdot \frac{1}{s}$

$* \frac{d}{dt}\, y(t) + 3y(t) = x(t)$

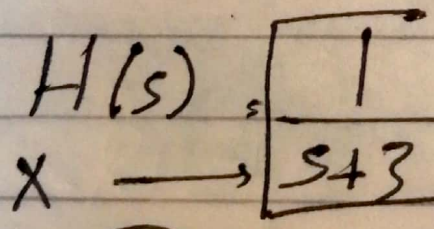
S.Domain

$sY(s) - 3Y(s) = X(s)$

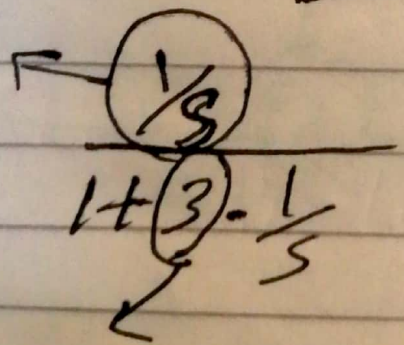
$Y(s+3) = X(s)$

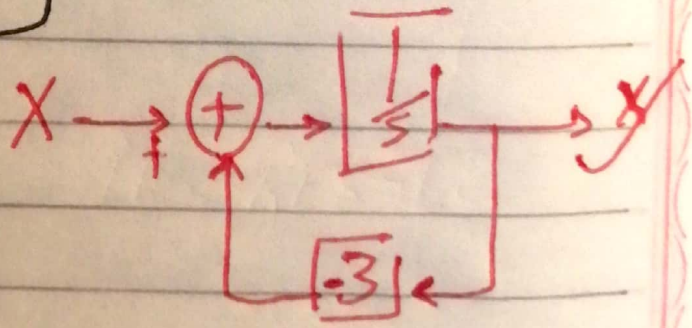
$\frac{X(s)}{X(s)} =$

$H(s) = \frac{1}{s+3}$



FF



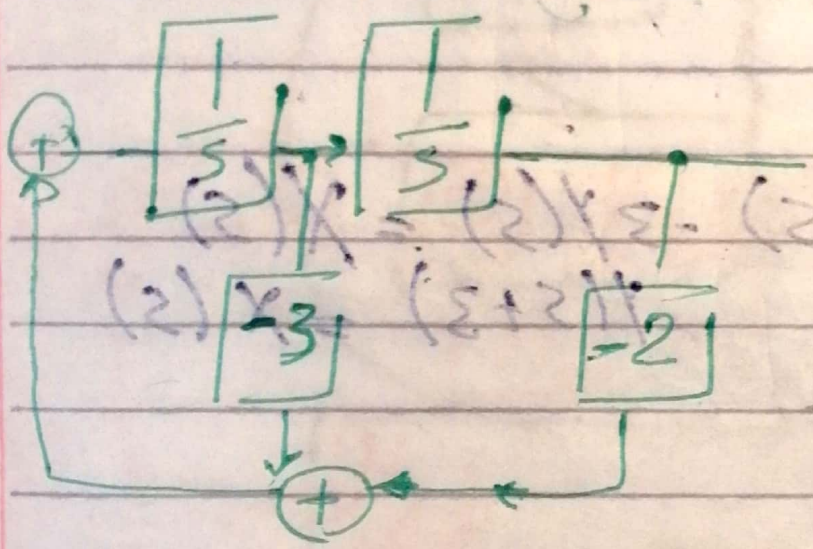


Subject :

Date : / /201

$$H(s) = \frac{1 \div s^2}{s^2+3s+2 \div s^2}$$

$$= \frac{\frac{1}{s^2}}{1+\frac{3}{s}+\frac{2}{s^2}} = \frac{\frac{1}{s}\cdot\frac{1}{s}}{1+3\cdot\frac{1}{s}+2\cdot\frac{1}{s}\cdot\frac{1}{s}}$$



Subject :

Date : / /201

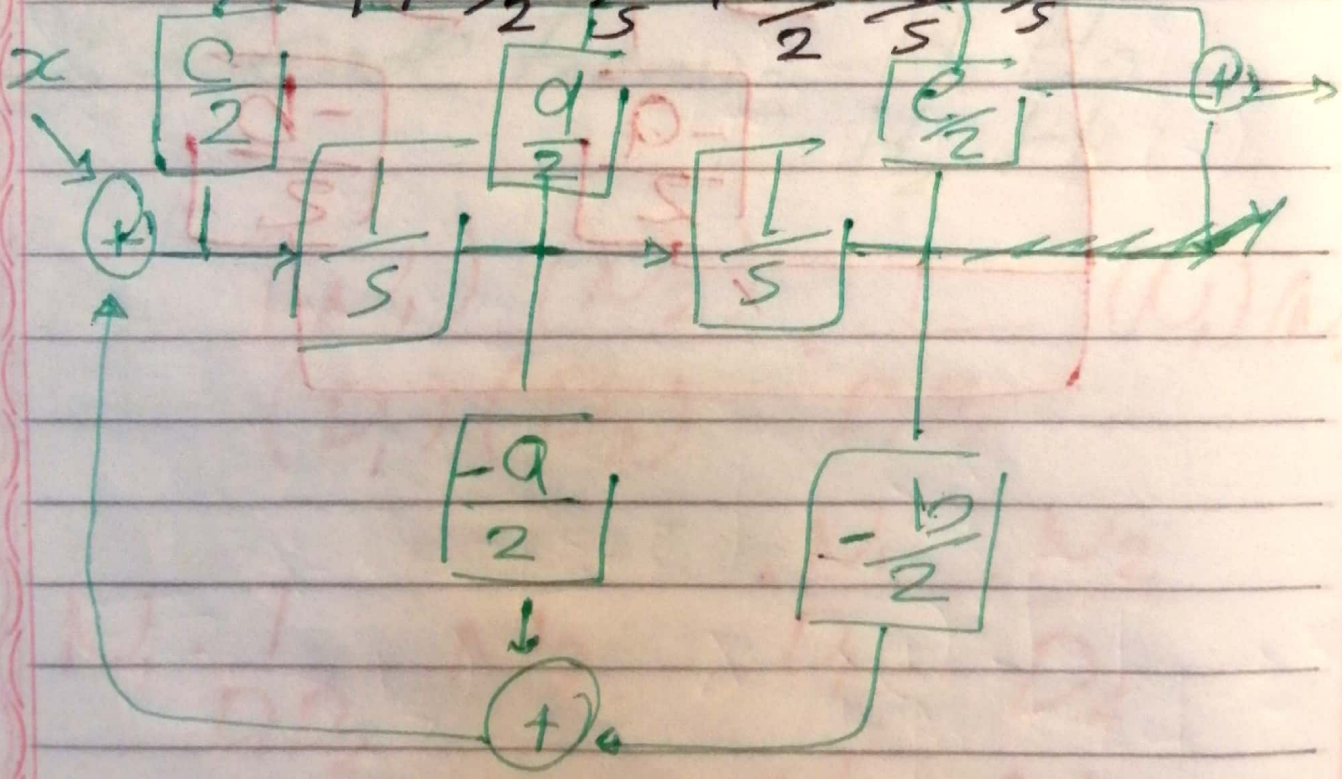
موضوع الدرس :

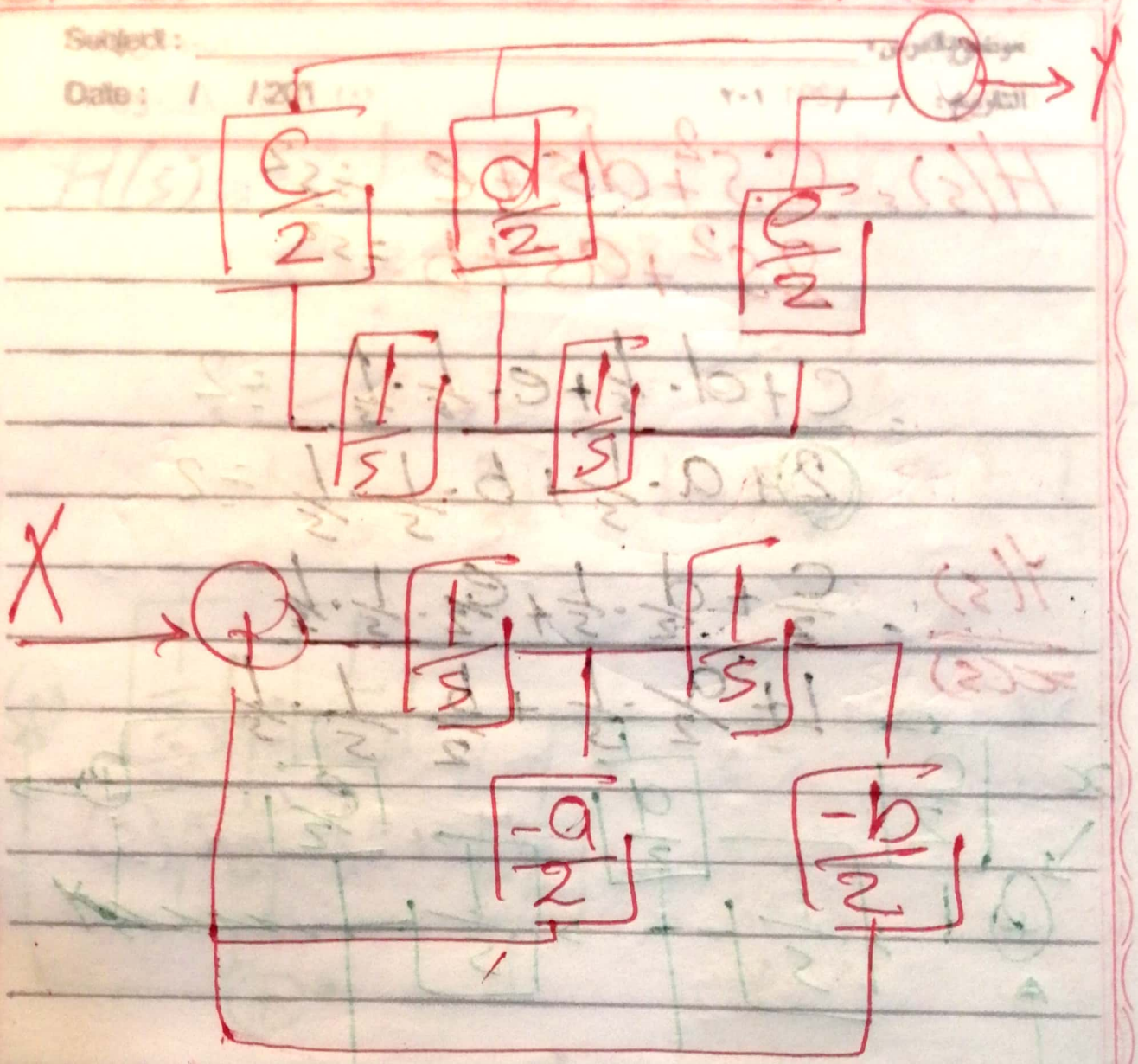
التاريخ : / / ٢٠١

$$H(s) = \frac{cs^2+ds+e}{2s^2+as+b} \quad \div s^2$$

$$= \frac{c+d\cdot\frac{1}{s}+e\cdot\frac{1}{s}\cdot\frac{1}{s}}{2+a\cdot\frac{1}{s}+b\cdot\frac{1}{s}\cdot\frac{1}{s}} \quad \div 2$$

$$\frac{Y(s)}{X(s)} = \frac{\frac{c}{2}+\frac{d}{2}\cdot\frac{1}{s}+\frac{e}{2}\cdot\frac{1}{s}\cdot\frac{1}{s}}{1+\frac{a}{2}\cdot\frac{1}{s}+\frac{b}{2}\cdot\frac{1}{s}\cdot\frac{1}{s}}$$




c/2
d/2
c/2
Y
1/s
1/s
X
+
1/s
1/s
-a/2
-b/2

Subject :

Date : / / 201

$$\frac{cs^2+ds+e}{s^2+as+b} = \frac{1}{(\quad)}\cdot(\quad)$$

$$\frac{1}{s^2+3s+2} = \frac{1}{(s+1)(s+2)} = \frac{1}{(s+1)}\cdot\frac{1}{(s+2)} = (\quad)\cdot\frac{1}{(\quad)}$$

(1) Direct form :- H

(2) Cascade form :- $H_1\ H_2$ or $H_2\ H_1$

$$\frac{(N_1)(N_2)}{(D_1)(D_2)} = \frac{1}{D_1D_2}\cdot(N_1)(N_2)$$

$$N_1\cdot\frac{1}{D_1D_2}\cdot N_2 = \frac{N_1}{D_1}\cdot\frac{N_2}{D_2}$$

$$= \frac{N_2}{D_1}\cdot\frac{N_1}{D_2}$$

Subject:

Date: / /201

③ Parallel form

$$\frac{1}{(s^2)}\cdot\frac{(s^2)}{(s^2)}$$