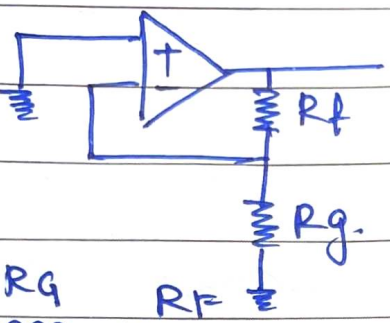
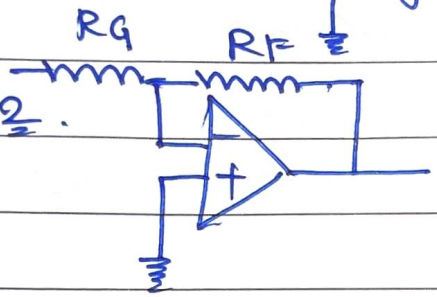
DATE

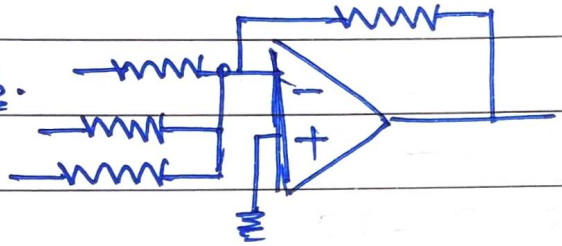
1.



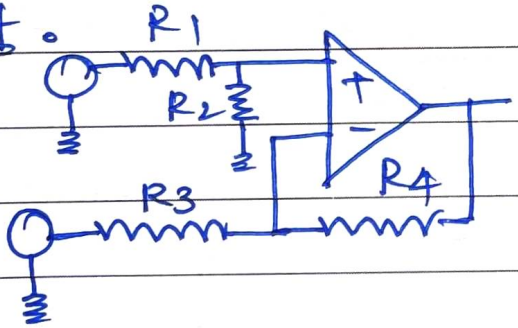
2.



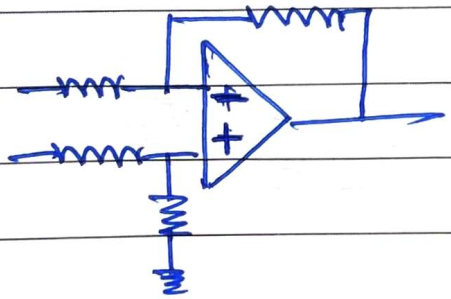
3.



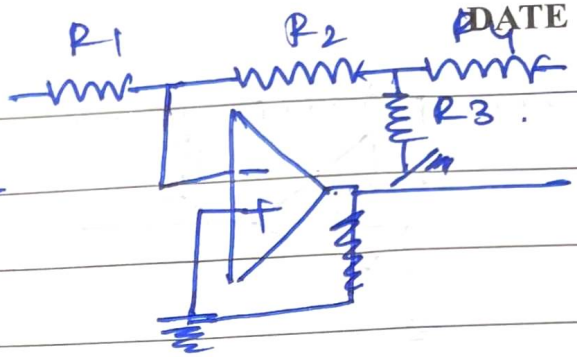
4.



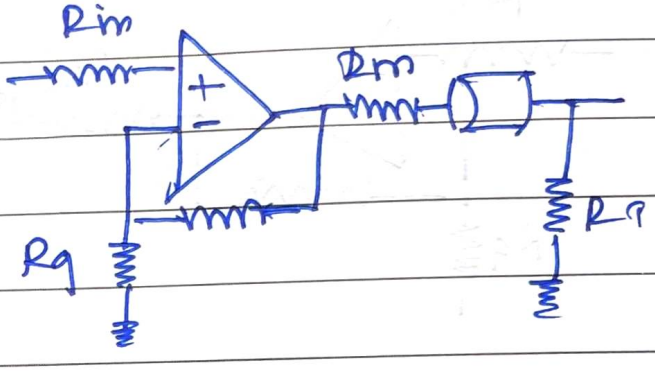
5.



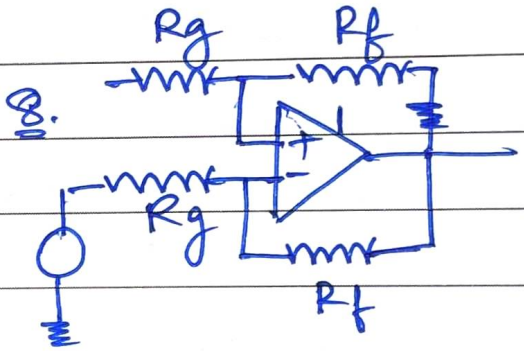
6.

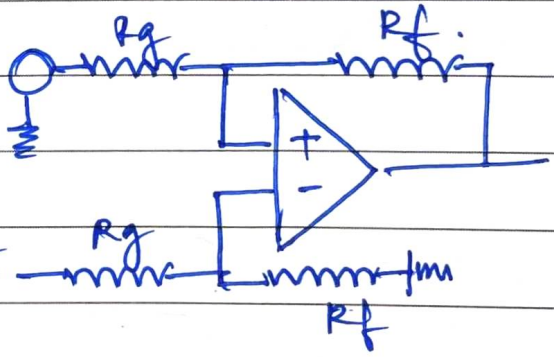


7.



8.





1. $\frac{V_{out}}{V_{in}} = 1 + \frac{R_F}{R_G}$

$\frac{V_o}{V_s} = \frac{R_i}{R_i + R_S} \cdot A_{OC} \cdot \frac{R_L}{R_O + R_L}$

2. $A_V = -\frac{R_F}{R_g}$; $Z_{in} = R_G$.

$I_{RF} = I_{RG}$

$I_1 = \frac{V_{in}}{R_G}$ $I_2 = -\frac{V_{in}}{R_F}$.

3. $A_V = -\frac{R_F}{R_n} \cdot V_{in}$

4. $A_V = V_1 \left(\frac{R_2}{R_1 + R_2} \cdot \frac{R_3 + R_4}{R_3} \right) - V_2 \frac{R_4}{R_3}$

$A_V = (V_1 - V_2) \cdot \frac{R_4}{R_3}$.

5. $A_V = (V_{(+)} - V_{(-)}) \frac{R_f}{R_i} \left(1 + \frac{2R_1}{R_2} \right)$.

6. $V_{th} = \frac{R_4 \cdot V_{out}}{R_3 + R_4}$ $R_{th} = R_3 \| R_4$

$A_V = \frac{R_2 + R_3 + R_2 R_3 / R_4}{R_1}$

7. $X_C = \frac{1}{2\pi f C}$ $A_V|_{\text{1. freq}} = 1 + \frac{R_F}{X_C \| R_G}$

$A_V|_{UPF} = -\frac{X_C \| R_F}{R_G}$

DATE

8. $V_{out} = (V_{ref} - V_{in}) \cdot \frac{R_f}{R_g}$

$V_{out} = (V_{in} - V_{ref}) \cdot \frac{R_f}{R_g}$

PES UNIVERSITY

DATE

9. $V_{out} = mV_{in}$

$$m = \frac{R_2}{R_1 + R_2}$$

$V_{out} = mV_{in} + b$.

$$m = \left(\frac{R_2}{R_1 + R_2}\right)\left(\frac{R_F + R_G}{R_G}\right)$$

$$b = \left(\frac{R_2}{R_1 + R_2}\right) \cdot \left(\frac{R_F + R_G}{R_G}\right) \cdot V_{ref}$$

$V_{out} = mV_{in} - b$.

$$m = \frac{R_F + R_G + R_1 \| R_2}{R_G + R_1 \| R_2}$$

$$b = V_{ref}\left(\frac{R_2}{R_1 + R_2}\right) \cdot \left(\frac{R_F}{R_G + R_1 \| R_2}\right)$$

$V_{out} = -mV_{in} + b$.

$$m = \frac{R_f}{R_g}$$

$$b = V_{ref} \cdot \left(\frac{R_1}{R_1 + R_2}\right) \cdot \left(\frac{R_F + R_G}{R_G}\right)$$

$V_{out} = -mV_{in} - b$.

$$m = \frac{R_f}{R_{g1}} \qquad b = V_{ref} \cdot \frac{R_f}{R_{g2}}$$

DATE

Unit-2

→

DATE

1. $V_{out} = mV_{in}$

$m = R_2 / R_1 + R_2$

$V_{out} = mV_{in} + b$.

$m = \frac{1/R_1}{1/R_1 + 1/R_2 + 1/R_3}$ $\quad b = \frac{1/R_3}{1/R_1 + 1/R_2 + 1/R_3}$.

$V_{out} = mV_{in} - b$.

$m = \left(\frac{R_2}{R_1 + R_2}\right)\left(1 + \frac{R_f}{R_g}\right)$. $\quad b = V_{ref} \cdot \frac{R_f}{R_g}$.

2. $V_{out} = -mV_{in}$

$m = \frac{R_{in} \times R_{alter}}{R_{in}[R_{in} + 2R_{alter}]}$

$V_{out} = -mV_{in} + b$.

$m = \frac{R_{in} \cdot R_{alter}}{R_{in}[R_{in} + 2R_{alter}]}$

$b = V_{ref} \cdot \left(\frac{R_2}{R_1 + R_2}\right)\left(1 + \frac{R_f}{R_{in}[R_{in} \,||\, R_{alter}]}\right)$.

$V_{out} = -mV_{in} - b$.

$m = \frac{R_{in} \cdot R_{alter}}{R_{in}[R_{in} + 2R_{alter}]}$ $\quad b = V_{ref} \cdot \frac{R_f}{R_g}$

DATE

3. $A_V = \frac{A}{1+A\beta} ; \frac{1}{\beta} ; 1+\frac{Z_F}{Z_G}$

4. $A_V = \frac{a}{1+ aZ_G/Z_G+Z_F}$

$A\beta = \frac{aZ_G}{Z_G+Z_F}$.

5. $O.L.G = \frac{aZ_F}{Z_G+Z_F}$ $CLG = \frac{aZ_G}{Z_G+Z_F}$.

$A_V = \frac{aZ_F/Z_G+Z_F}{1+ aZ_G/Z_G+Z_F} ; \frac{-Z_F}{Z_G}$.

6. $V_{th} = \frac{\Delta V_a}{Z_O C_L s+1}$ $Z_{th} = \frac{Z_O}{Z_O C_L s+1}$

$A\beta = \frac{aZ_G/Z_F+Z_G+Z_O}{1+ (Z_F+Z_G)Z_O/Z_F+Z_G+Z_O}$.

$Z_O << Z_F \Rightarrow$.

$A\beta = \frac{aZ_G}{Z_G+Z_F}$ $CLTF = \frac{a}{1+ aZ_G/Z_G+Z_F}$.

$a \to \infty$ $A_V = \frac{Z_F+Z_G}{Z_G}$.

DATE

7. $A\beta = \frac{a2G}{ZG+2F}$

$$AV = \frac{a}{1 + a2G/ZG+2F}$$

8. $$AV = \frac{-a2F/ZF+ZG}{1 + a2G/ZG+2F}.$$

$$AV|_{a\to\infty} = -\frac{ZF}{Zin}.$$

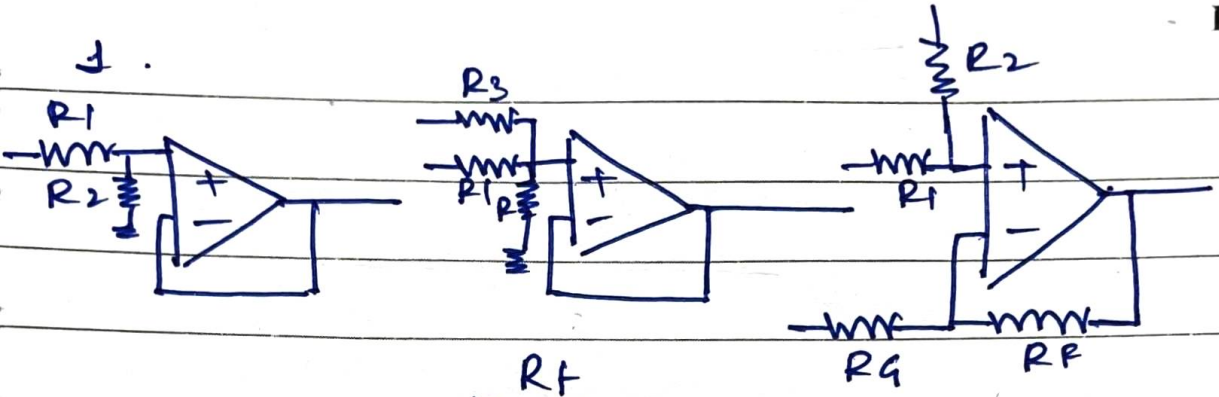
CL. $$AV = -\frac{RF}{RG}\left(\frac{1}{RFCs+1}\right).$$

9. ~~RG~~ $$A\beta = \frac{RG/RGCGS+1}{\frac{RF}{RFCFS+1} + \frac{RG}{RGCGS+1}}$$

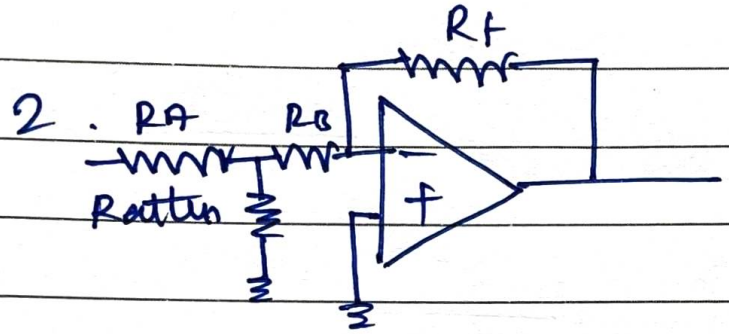
10. $$AV = -\frac{RF}{RG}.$$

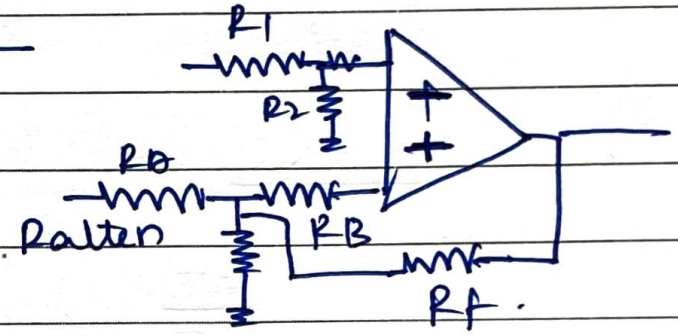
DATE

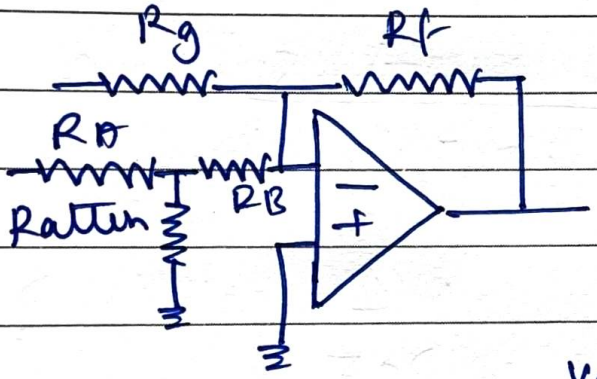
1.


R1
R2
R3
R1
R2
R1
RG
RF

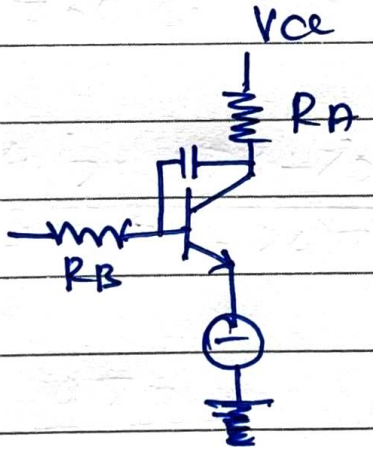
2.


RA
RB
Rattn
Rf

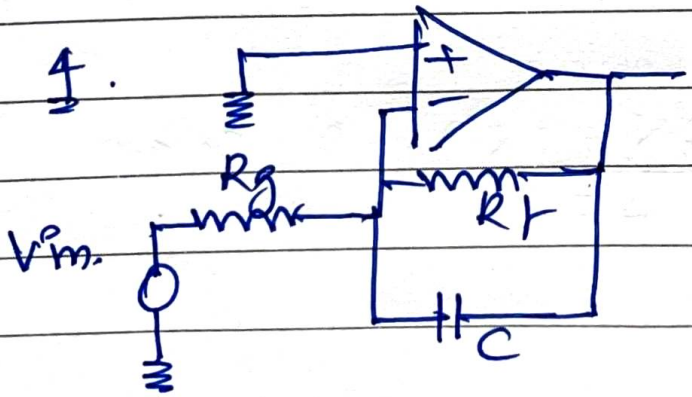

R1
R2
RB
Rattn
RB
Rf


Rg
Rf
RA
RB
Rattn

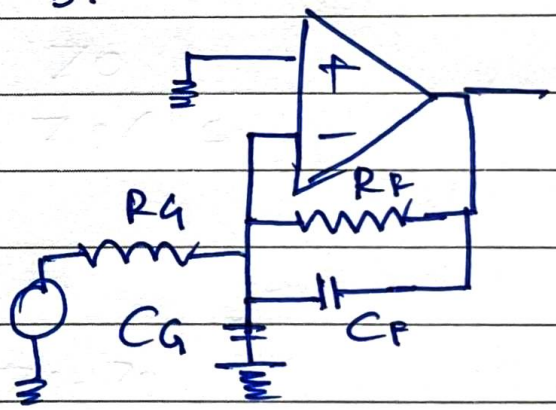
3.


Vcc
RA
RB

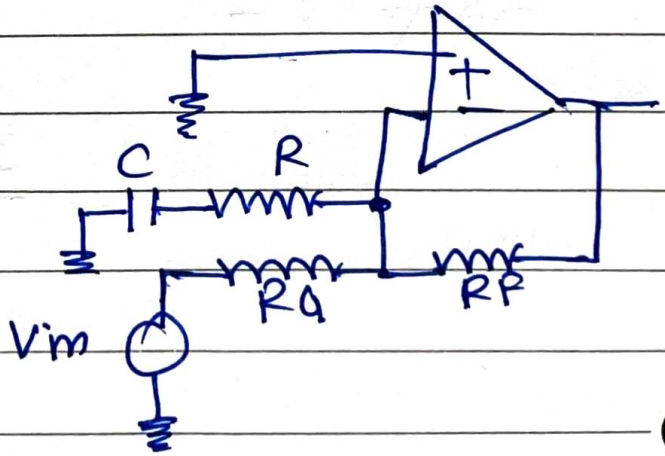
4.


Rg
Rf
Vin
C

5.


RF
RG
CG
CF

6.


C
R
RG
RF
Vin