



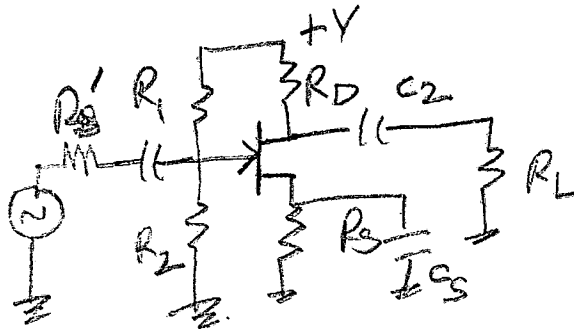
OR

12.(b) Explain FWR with capacitor filter and derive for ripple factor.

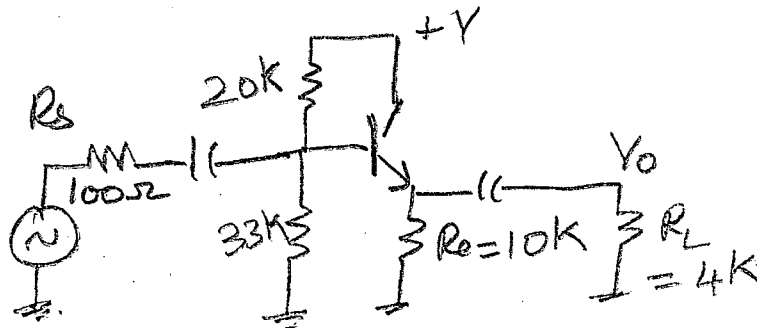
13.(a) Draw a CE amplifier with voltage divider bias with its equivalent circuit, derive for  $A_{vs}$ ,  $R_{in}$ ,  $A_{is}$  and  $R_o$ . (16)

OR

13.(b)(i) In the circuit shown write the expressions for cut-off frequencies due to  $C_1$ ,  $C_2$  and  $C_s$ . (6)



(ii)



$h_{fe} = 300$   
 $h_{ie} = 5.2K$

Calculate the voltage gain  $R_{in}$  and  $R_o$ . (10)

14.(a) Explain the operation of Weinbridge oscillator and derive for the output frequency.

OR

14.(b)(i) Draw the topological block diagram for voltage series, voltage shunt, current series and current shunt feedback. (8)

(ii) Write the merits and demerits of Negative feed back amplifier. (4)

(iii) A voltage shunt amplifier has  $R_{in} = 5k$  without feedback and Desensitivity factor of 5. Calculate  $R_{if}$ . (4)

15.(a) Explain how voltage regulation is obtained using series voltage regulator.

OR

15.(b) Describe any one type of DC-DC converter using circuit diagram.