

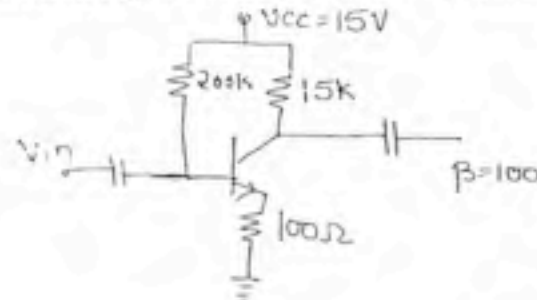
SECOND TERM EXAMINATION

IIIrd Semester [B. Tech.]
 Paper Code: ETEC-207
 Time: 1Hrs 30 Min.

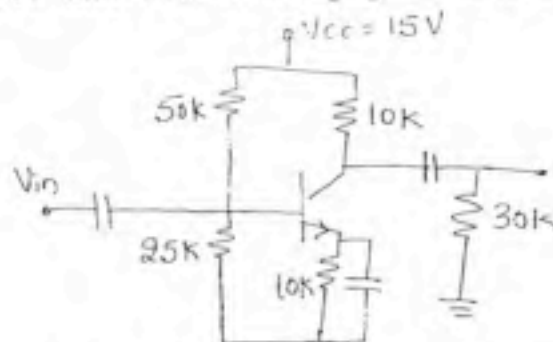
November'2008
 Sub: Analog Electronics-I
 Max. Marks: 30

Note: Attempt Q. No. 1 and any two more questions.

- Q.1 (a) Compare the performance CE, CC & CB amplifier in term of A_i , R_i , A_v , R_o . (2)
 (b) Explain how self bias arrangement is an improvement over fixed bias. (2)
 (c) An amplifier has voltage gain with feedback is 100. If the gain without feedback changes by 20% and the gain with feedback should not vary more than 2%, determine the value of open loop gain A & β . (3)
 (d) Define & derive the relation between the high frequency parameter F_β & F_T . (3)
- Q.2 (a) Draw the circuit diagram of a Darlington pair. Give its merits & applications. (4)
 (b) For the circuit shown in Fig. 1 determine (a) Q point, (2) Stability factor $S(\partial I_{CQ} / \partial I_C)$ (6)



- Q.3 (a) Draw and explain the function of each component in the circuit of a RC coupled amplifier and explain, why gain falls at low & high frequency. (5)
 (b) An amplifier of Fig. 2 has the following set of h parameter $h_{ie} = 2 \text{ k}\Omega$, $h_{fe} = 100$, $h_{re} = 5 \times 10^{-4}$ and $h_{oe} = 2.5 \times 10^{-5} \text{ mho}$. Find the voltage gain & an input impedance & R_o of the stage. (5)



- Q.4 (a) Explain the advantage of negative feedback amplifier. (4)
 (b) For the circuit shown in Fig. 3 determine r_x , A_i , R_i , A_{VS} , R_o , R_o' . (6)

