

hierarchy

S.E. (Elect) IV (Rev.)

27/1/08

Con. 2664-08.

Electronic Circuits

CO-9722

(REVISED COURSE)

(3 Hours)

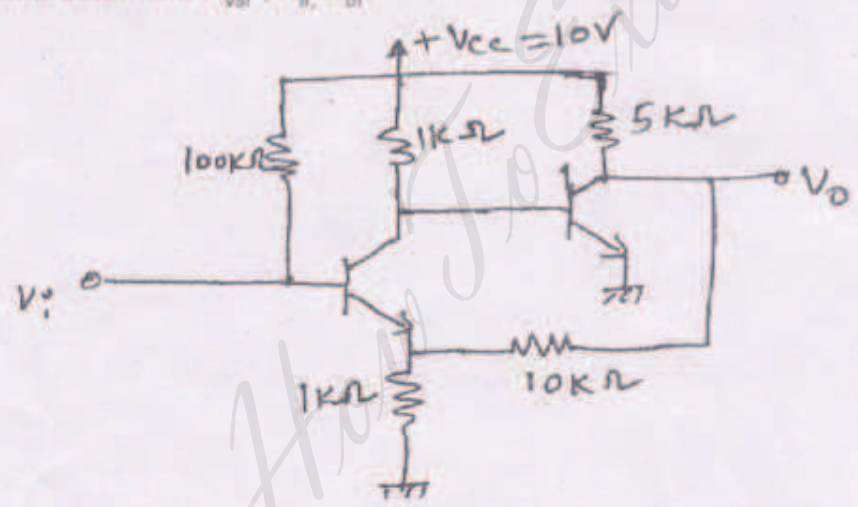
[Total Marks : 100

MASTER

- N.B.:** (1) Question No. 1 is compulsory.
 (2) Attempt any **four** questions from remainign **six** questions.
 (3) Assume **suitable** data wherever **required** but justify the **same**.
 (4) **Figures** to the **right** indicate marks.

1. Explain the following :— 20
 - (a) Miller's effect and frequency response.
 - (b) Logarithmic and antilogarithmic amplifier using OP-Amp.
 - (c) Characteristics of negative feedback amplifiers.
 - (d) Low frequency oscillators
 - (e) Push-pull amplifiers.
2. Design a two stage RC coupled CE amplifier to meet the following requirements : 20

$AV \geq 1800$
 $V_{o \max} = 2.5 \text{ V}$
 $F_C \leq 15 \text{ Hz}$, Stability $S \leq 10$
 Assume $h_{ic} = 220$, $h_{ie} = 2.2 \text{ K}\Omega$, $\beta = 150$.
3. (a) Effects of negative feedback on gain, stability, bandwidth, non-linear distortion etc. 10
 (b) Identify the topology used in the following feedback amplifier with necessary justification 10
 and determine A_{vsf} , R_{if} , R_{of} .



for both BJT's
 $h_{ie} = 1.1 \text{ k}\Omega$
 $h_{fe} = 50$
 Neglect h_{re} , h_{oe} .

4. (a) Explain Barkhausen's criteria. Derive the expression for frequency of oscillation and condition for oscillations of Wienbridge oscillator. 10
 (b) Compare low frequency and high frequency oscillators. Explain the LC oscillators and their applications. 10
5. (a) Explain the UJT and its characteristics. 10
 (b) Derive expression for efficiency of class A power amplifier with transformer coupled load. 10
6. (a) Derive expressions for differential gain 'Ad', input impedance 'R_i' and output impedance 'R_o' of Balanced input and Balanced output differential amplifier. 10
 (b) Draw the cascade configuration and explain its working, merits and demerits. 10
7. (a) Draw and explain the operation of Transistorized bootstrap sweep generator. 10
 (b) Large signal amplifiers Vs Small signal amplifier. 10