Principles of Electronics' Project: Phase 1 (Individual)
Dr. Kavehvash
Deadline: 1399/01/15, 24 PM

Considering Fig.1 assign proper values to the resistors to fulfil the requirements below.

$V_{CC} = 10v \qquad V_{EE} = -10v$
$A_{vd} \geq 10^6 \qquad CMRR \geq 10^5$
$CMR: \pm 8v \; or \; better$
$Output \; Swing: 8.5v_{p-p}$

Report must include transistors bias points, output voltage and current figures, and detailed calculations (you have to justify all of the designated resistance values).

Please upload the report and simulation files in your course ware (CW) page. In this manner, you can ask your related **questions** from abdi.behzad96@yahoo.com.

P.S:

- Assume that the transistors are:

  $npn: I_S = 7.049\,fA,\ \beta = 150,\ V_A = 200v$
  $pnp: I_S = 336.7\,fA,\ \beta = 80,\ V_A = 150v$

- Output node is the connection between Q5 & Q4.
- R4 & R5 are connected to V_{CC} and V_{EE} respectively.

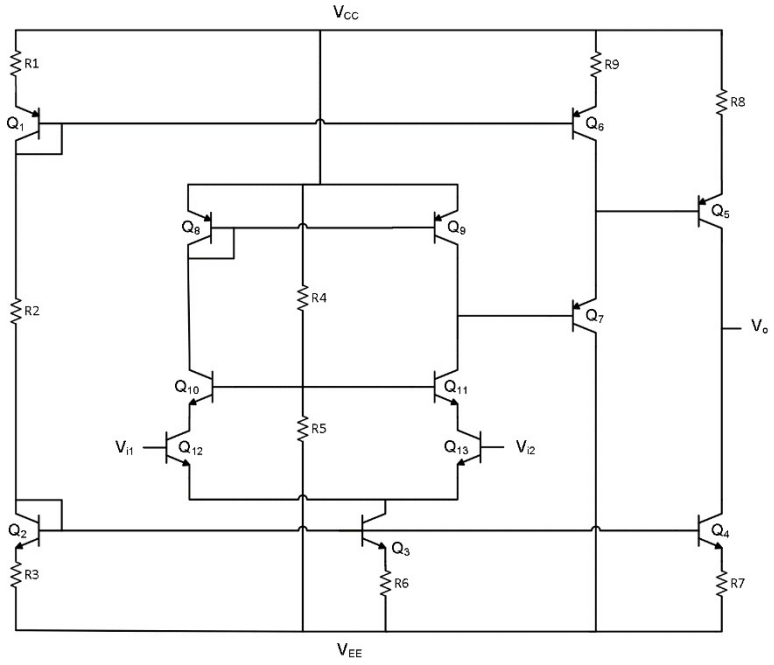

Fig. 1 Circuit schematic

Spring 99
Happy new year