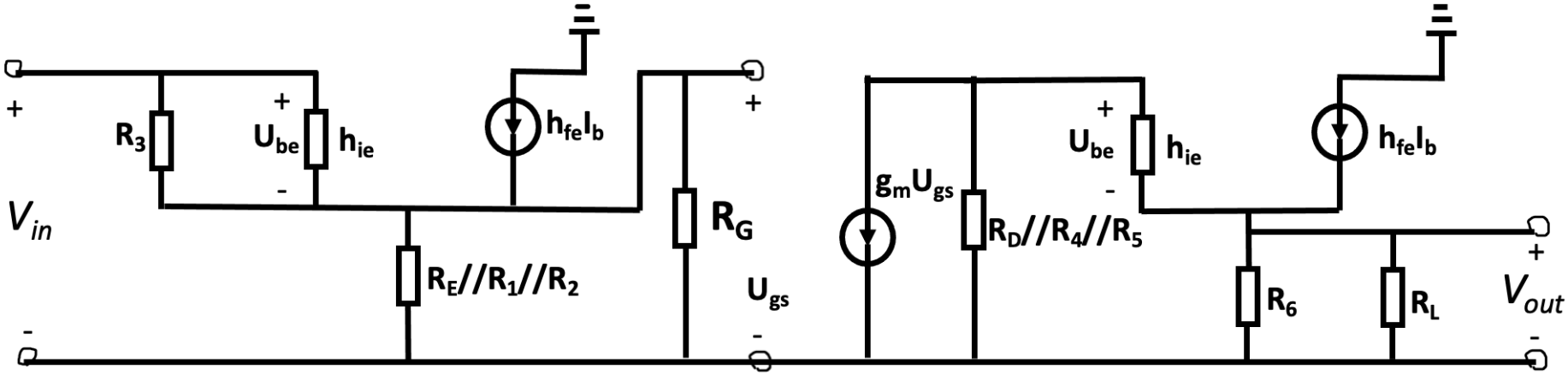

Calculate the output voltage V_{out} if V_{in}=sin(10^3t).

Given:

$R_1 = 10\ k\Omega, R_2 = 10\ k\Omega, R_3 = 10\ k\Omega$, R_4 = 20 kΩ, R_5 = 68 kΩ, R_6 = 330 Ω

R_E = 1 kΩ, $RG = 1\ M\Omega$, R_L = 50 Ω, RD = 1.2 kΩ, R_S = 131.5 Ω

E = 12 V

$V_p = -3.5V$

$g_m = 3mS$

$h_{ie} = 2\ k\Omega$

$h_{fe} = 100$

$B = 100$

$I_{CQ} = 4.6\ mA$

$U_{CE} = 7.3\ V$

$I_{DQ} = 6mA$

$U_{DSQ} = 4V$