QUIZ NO. 9

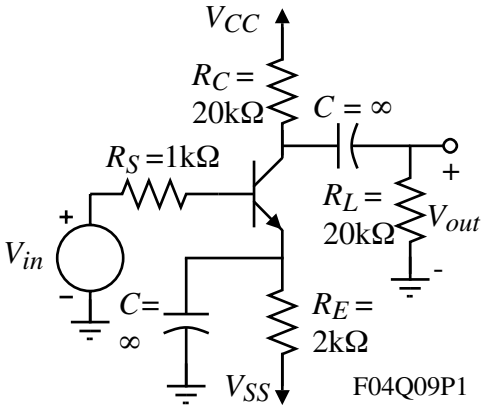
NAME_____Score_____/10

Assume that the small-signal parameters of the BJT amplifier shown are $g_m = 10\text{mS}$, $r_\pi = 1\text{k}\Omega$, $r_x = 0$, $r_o = \infty$, $C_\pi = 10\text{pF}$, and $C_\mu = 1\text{pF}$.

a.) Find the midband voltage gain of this amplifier, V_{out}/V_{in}.

b.) Find the value of the upper -3dB frequency, f_H, in Hz, first using the Miller approximation and secondly using the open-circuit time constant approach.

c.) Which of the two answers for f_H in part b.) is the most accurate and why?



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