

G. Kovacs' Quals Question – 2001/2002

The student was asked to sketch the design, on paper, of an analog circuit (amplifier, oscillator, filter, etc.) that used three NPN bipolar transistors and any passive components the student wished. The student was told that it was up to them to choose the circuit parameters. It was requested that the circuit not be overly complex, and that the exact component values were not wanted – rather, the student was asked to discuss the design process. Students who were not familiar with BJT's were told that they should design with MOS transistors and the examiner would help them "translate" their design. The student was told that giving rough design equations would be helpful, but that it was key to explain the desired properties and operation of the circuit.