EE 330 Quiz #13

Name: Score

Grader:

Briefly answer the following questions:

1. Draw a 3-terminal NMOST small signal model with gm/go parameters;

See slides

1. In terms of IDQ and transistor size/process parameters, gm =\_\_(2IDQ\*uCoxW/L)^0.5\_\_\_\_\_\_\_\_\_\_\_\_\_
2. In terms of IDQ and transistor size/process parameters, go =\_\_lambda\*IDQ\_\_\_\_
3. Draw a 3-terminal NPN BJT small signal model with g parameters;

See slides

1. In terms of IC and transistor size/process parameters, g =\_\_\_Ic/(kT/q)\_\_\_\_\_
2. In terms of IC and transistor size/process parameters, gm =\_\_\_ Ic/(kT/q)\_\_\_\_\_
3. In terms of IC and transistor size/process parameters, go =\_\_\_Ic/VAF\_\_\_\_
4. For any 2-terminal device, its small signal model is a resistor
5. For a diode-connected NMOST (G tied to D), its s.s. R =­­\_\_\_1/gm\_\_\_\_\_\_
6. For a diode-connected BJT (B tied to C), its s.s. R =­­\_\_\_1/gm\_\_\_\_\_