Answer the four multiple choice questions below by choosing the one, best answer. Then ask a question about the lecture.

1) There are two PN junctions in a bipolar transistor. Each one can be either forward biased (FB) or reverse biased (RB). In the normal (forward active) mode of operation, how are these two junctions biased?
   a) Emitter-base is FB and base-collector is FB.
   b) Emitter-base is FB and base-collector is RB.
   c) Emitter-base is RB and base-collector is FB.
   d) Emitter-base is RB and base-collector is RB.
   e) Emitter-base is zero-biased and base-collector is zero-biased.

2) The increase in collector current as the magnitude collector voltage increases is known as the Early effect and is due to what physics?
   a) Quantum mechanical tunneling.
   b) Impact ionization.
   c) SRH recombination
   d) The decreasing width of the quasi-neutral base.
   e) Generation in the space charge region.

3) In which operation region(s) does the Ebers-Moll model describe a bipolar transistor?
   a) Forward active.
   b) Inverted active.
   c) Saturation.
   d) Cut-off.
   e) All of the above.
4) In a good bipolar transistor operating in the active region, what is the spatial profile of minority carriers in the base?

a) Exponentially increasing from emitter to collector.
b) Exponentially decreasing from emitter to collector.
c) Linearly increasing from emitter to collector.
d) Linearly decreasing from emitter to collector.
e) Constant.

5) What question(s) do you have about this lecture?

Turn in to Ms. Wanda Dallinger, EE-326 by Friday, March 22