Fundamentals of Nanotransistors
L2.8 Quiz
ANSWERS
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Lecture 2.8: The VS Model Revisited

1) Which of the following is true about the room temperature (300 K) subthreshold swing of a MOSFET?

   a) $SS \pounds 30\,\mathrm{mV/dec}$.
   b) $SS \pounds 60\,\mathrm{mV/dec}$.
   c) $SS \, ^3 \, 30\,\mathrm{mV/dec}$.
   d) $SS \, ^3 \, 60\,\mathrm{mV/dec}$**.**
   e) $SS \pounds 120\,\mathrm{mV/dec}$.

2) How are the on-current and off-current of a MOSFET related?

   a) A linear increase in on-current will give a linear increase in off-current.
   b) An exponential increase in on-current will give a linear increase in off-current.
   c) A linear increase in on-current will give an exponential increase in off-current.
   d) A linear increase in on-current will give a linear **decrease** in off-current.
   e) An exponential increase in on-current will give a linear **decrease** in off-current.

3) Which of the following is true of the empirical expression for the mobile charge in the MVS model?

   a) It provides a continuous expression from subthreshold to above threshold.
   b) It is essentially exact well above threshold.
   c) It is approximately correct in subthreshold.
   d) All of the above.
   e) None of the above.