

Name: _____

Student ID #: _____

EECS 170A Section B

Homework #1

HW will be collected in DISCUSSION ONLY.

Do not turn your HW in anywhere else, or it will not be accepted.

DUE: 1 PM Wednesday, October 10, 2007

Please *staple* this sheet to the front of your homework.

| | | | |
|-----|-----|-----|-------|
| 1 | 2a | 2b | Total |
| /50 | /25 | /25 | /100 |

- 1) In a modern integrated circuit, there are 10^8 transistors. They fit onto one chip. The chip size is typically about 1 cm x 1 cm. Calculate the area that each transistor occupies. If the area is a square geometry, calculate the length of one side of the square.

- 2) A current of 10 A flows through a copper wire. It's diameter is 0.25".
 - a. What is the current density in the wire.
 - b. How many electrons per second flow past a plane perpendicular to the wire.