

DEPARTMENT OF ELECTRICAL ENGINEERING  
INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

EE 210

MINI-QUIZ #1

20.1.21

Total Marks: 10

Total Time: 10 mins.

Performing a *self-consistent analysis*, find  $V_D$  and  $I_D$  (*both correct to the third place after decimal*). Data:  $r_p = r_n = 100\ \Omega$ , and  $I_0 = x\ \text{fA}$  (if the last digit of your roll number is 0 to 4:  $x = 2$ , and 5 to 9:  $x = 20$ ). [ $\text{fA} = 10^{-15}\ \text{A}$ ,  $V_T = 26\ \text{mV}$ ]

