

UM-SJTU JI Summer 2019 VE 320 Quiz 2

Name:

Student ID:

1. A silicon device with n-type material is to be operated at $T = 550$ K. At this temperature, the intrinsic carrier concentration must contribute no more than 5 percent of the total electron concentration. Determine the minimum donor concentration required to meet this specification. Please provide the process of derivation.

2. For GaAs, what are the ways to improve the carrier mobility?