1. Consider the following dopant profile for a diode

$5 \times 10^{17} cm^{-3}$
$x_p + 200$ nm.

x_p
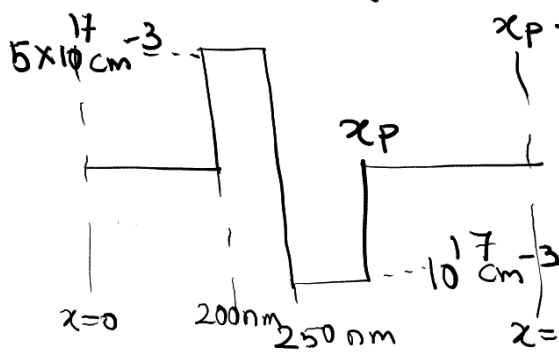
Assume x_p appropriately such that charge neutrality is maintained.

$-10^{17} cm^{-3}$

$x=0$ 200nm   250 nm $x =$

Plot the electric field and potential.

2. Repeat 1 assuming linearly graded junction as :

$5 \times 10^{17} cm^{-3}$
x_p $| x_p + 200$ nm.

Choose x_p as that of in Q 1.

$-10^{17} cm^{-3}$ $x = 500$ nm.

200 nm

$x = 0$ 250 nm
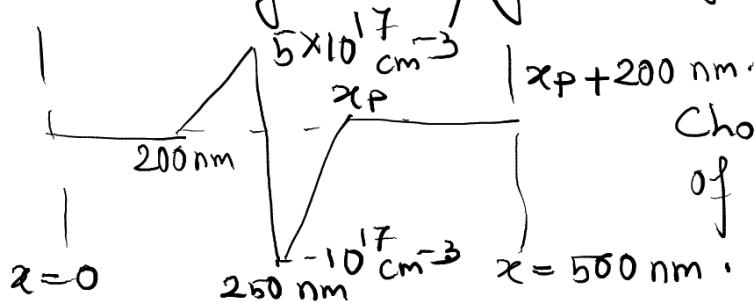
3. During actual fabrication, the doping profile usually takes the shape of Gaussian. Choose some Gaussian profile and simulate electric field and potential. You can conveniently choose the profile yourself.