Acceptable solution:

Full credits are given to answers with electric field $=0$ and diffusion current density $=0$ in Q3b) and Q3c) respectively, if it is clearly stated in the assumption that $\delta N_{D} \ll$ $\mathrm{N}_{\mathrm{D} 0}$, so that $\mathrm{N}_{\mathrm{D}}(\mathrm{x})$ is assumed to be constant or showing the flat energy band diagram in Q3a).

