65. (a) The direction of the electric field at P_1 is away from q_1 and its magnitude is

$$\left|\vec{E}\right| = \frac{q}{4\pi\varepsilon_0 r_1^2} = \frac{(8.99\times10^9\,\mathrm{N\cdot m^2/C^2})(1.0\times10^{-7}\mathrm{C})}{(0.015\,\mathrm{m})^2} = 4.0\times10^6\,\mathrm{N/C}\ .$$

(b) $\vec{E} = 0$, since P_2 is inside the metal.