17. (a) The area of a sphere may be written $4\pi R^2 = \pi D^2$. Thus,

$$\sigma = \frac{q}{\pi D^2} = \frac{2.4\times10^{-6}\ \text{C}}{\pi\left(1.3\ \text{m}\right)^2} = 4.5\times10^{-7}\ \text{C/m}^2.$$

(b) Eq. 23-11 gives

$$E = \frac{\sigma}{\varepsilon_0} = \frac{4.5\times10^{-7}\ \text{C/m}^2}{8.85\times10^{-12}\ \text{C}^2/\text{N.m}^2} = 5.1\times10^{4}\ \text{N/C}.$$