56. Since the charge distribution is spherically symmetric we may write

$$E(r) = \frac{1}{4\pi\varepsilon_0} \frac{q_{\text{encl}}}{r} ,$$

where q_{encl} is the charge enclosed in a sphere of radius r centered at the origin. Also, Eq. 25-18 is implemented in the form: $V(r) - V(r') = \int_r^{r'} E(r)\, dr$. The results are as follows: For $r > R_2 > R_1$

$$V(r) = \frac{q_1 + q_2}{4\pi\varepsilon_0 r} \quad \text{and} \quad E(r) = \frac{q_1 + q_2}{4\pi\varepsilon_0 r^2} .$$

For $R_2 > r > R_1$

$$V(r) = \frac{1}{4\pi\varepsilon_0}\left(\frac{q_1}{r} + \frac{q_2}{R_2}\right) \quad \text{and} \quad E(r) = \frac{q_1}{4\pi\varepsilon_0 r^2} .$$

Finally, for $R_2 > R_1 > r$

$$V = \frac{1}{4\pi\varepsilon_0}\left(\frac{q_1}{R_1} + \frac{q_2}{R_2}\right) \quad \text{and} \quad E = 0 .$$