66. With phasor techniques, this amounts to a vector addition problem $\vec{R} = \vec{A} + \vec{B} + \vec{C}$ where (in magnitude-angle notation) $\vec{A} = (10 \angle 0°)$, $\vec{B} = (5 \angle 45°)$, and $\vec{C} = (5 \angle -45°)$, where the magnitudes are understood to be in μV/m. We obtain the resultant (especially efficient on a vector capable calculator in polar mode):

$$\vec{R} = (10 \angle 0°) + (5 \angle 45°) + (5 \angle -45°) = (17.1 \angle 0°)$$

which leads to

$$E_R = (17.1\ \mu\text{V/m}) \sin(\omega t)$$

where $\omega = 2.0 \times 10^{14}$ rad/s.