



b)

$$|\psi_0\rangle = \left( \frac{|0\rangle + |1\rangle}{\sqrt{2}} \right)_A \otimes \left( \frac{|0\rangle + |1\rangle}{\sqrt{2}} \right)_B \otimes |1\rangle_C \otimes |0, \dots, 0\rangle_{\text{Other}}$$

