MS Exam ISRC Spring 2012 Solution:

\[ p(\{X_i\}) = \lambda \exp\{-\lambda \sum_i X_i\} \Rightarrow \Phi = \sum_i X_i \text{ is a sufficient statistic.} \]

Then \( E\{\Phi\} = N/\lambda \Rightarrow \lambda* = N/\Phi. \]

By the Rao-Blackwell result, \( \lambda^* \) is the minimum variance estimate if the density is complete.