The state before measurement is given by

$$\frac{1}{2^n}\sum_x\sum_y(-1)^{x\cdot y}|y\rangle\otimes|f(x)\rangle=\sum_{y\in\{0,1\}^n}|y\rangle\otimes\left(\frac{1}{2^n}\sum_{x\in\{0,1\}^n}(-1)^{x\cdot y}|f(x)\rangle\right)$$

If $s=0$, then $f(x)$ is injective, hence bijective.

Then the probability to observe y is given by

$$\left\|\frac{1}{2^n}\sum_{x\in\{0,1\}^n}(-1)^{x\cdot y}|f(x)\rangle\right\|^2=\left\|\frac{1}{2^n}\sum_{x\in\{0,1\}^n}(-1)^{x\cdot y}|x\rangle\right\|^2=\frac{1}{2^n}$$