A5P1d)

For N springs:

$$C_x = \begin{bmatrix} 1/100 & \cdots & 1/100 \\ \vdots & 2/100 & 2/100 \\ \vdots & \vdots & \ddots \\ 1/100 & 2/100 & N/100 \end{bmatrix}$$

So the largest entry is always the bottom right corner and equals $N/100$.

Since $\vec{dx} = C_x \vec{f}$, then the biggest term in C_x, call it "C_M", will be multiplied with f_N:

$$\vec{dx} = C_x \vec{f} \rightarrow dx_N = C_a f_1 + C_b f_2 + \ldots + \boxed{C_M f_N}$$

In other words, this max term is multiplied by the force applied to the last mass to contribute to the displacement of the last mass.

Conceptually, it is the largest because forces on the end of the spring chain have the biggest effect on displacement. I.e., when you think of the chain as one long spring, the stiffness goes down with length:

$\frac{1}{K_{tot}} = \frac{1}{K_1} + \frac{1}{K_2} + \ldots \frac{1}{K_N}$, so forces applied at the end extend the springs the most.