

Mostrar

# Problema 10

$$\textcircled{a)} \subseteq \{x_j \mid \hat{h}(1) x_2(x_1) = e_2 x_2(x_1)\}$$

$$\Rightarrow \psi^{HP}(x_1, \dots, x_N) = x_2(x_1) \dots x_k(x_N) \text{ en z.t. de } \hat{h} = \sum_{i=1}^N \hat{h}(i)$$

$$\text{con } E = e_1 + \dots + e_k$$

$$H \psi^{HP} = \left( \sum_{\alpha=1}^N \hat{h}(\alpha) \right) x_2(x_1) x_j(x_2) \dots x_k(x_N) =$$

$$= \left( \hat{h}(1) x_2(x_1) \right) \cdot x_j(x_2) \dots x_k(x_N) +$$

$$+ x_2(x_1) \left( \hat{h}(2) x_j(x_2) \right) \dots x_k(x_N) +$$

$$+ x_2(x_1) x_j(x_2) \dots \left( \hat{h}(k) x_k(x_N) \right)$$

$$= \left[ e_1 x_2(x_1) \cdot x_j(x_2) \dots x_k(x_N) \right] +$$

$$+ x_2(x_1) \left[ e_2 x_j(x_2) \dots x_k(x_N) \right] +$$

$$+ x_2(x_1) x_j(x_2) \dots \left[ e_k x_k(x_N) \right]$$

$$= \left( \sum_{\alpha=1}^N e_\alpha \right) |HP\rangle$$

Row on  $|DS\rangle$

$$\begin{aligned} \Rightarrow \hat{H} |DS\rangle &= \hat{H} A |HP\rangle = \hat{A} (\hat{H} |HP\rangle) = \hat{A} \left( \sum_{\alpha=1}^N e_\alpha |HP\rangle \right) \\ &= \sum_{\alpha=1}^N e_\alpha \hat{A} |HP\rangle = \left( \sum_{\alpha=1}^N e_\alpha \right) |DS\rangle \end{aligned}$$