

$$\begin{array}{l}
 1 \Rightarrow \frac{1}{2} \\
 0 \Rightarrow \frac{1}{2} \\
 0 \Rightarrow 2
 \end{array}
 \left. \vphantom{\begin{array}{l} 1 \\ 0 \\ 0 \end{array}} \right\} y(n) = \frac{1}{2} \quad \frac{1}{2} \quad 2$$

\boxed{H}

impulse response of \boxed{H} is $h(n)$

$$h(n) = \begin{array}{ccc} 0 & 1 & 2 \\ \frac{1}{2} & \frac{1}{2} & 2 \end{array}$$

$$\underline{y(n)} = x(n)h(0) + x(n-1)h(1) + x(n-2)h(2)$$

$$= \sum_{k=0}^2 x(n-k)h(k)$$

$$= \sum_{k=0}^K x(n-k)h(k)$$

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