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Section: 02

Ans 2

$$\begin{bmatrix} 1 & 3 & 4 & 2 & 1 \\ 2 & 5 & 6 & 3 & 4 \\ 4 & 5 & 6 & 3 & 2 \\ 5 & 5 & 2 & 5 & 3 \\ 6 & 5 & 3 & 2 & 1 \end{bmatrix} * \begin{bmatrix} 0 & 0 & 0 \\ 1 & 1 & 1 \\ 0 & 0 & 0 \end{bmatrix}$$

filter = 1

$$= \begin{bmatrix} 13 & 14 & 13 \\ 15 & 14 & 11 \\ 12 & 12 & 10 \end{bmatrix}$$

1

Again for filter 2

$$\begin{bmatrix} 1 & 3 & 4 & 2 & 1 \\ 2 & 5 & 6 & 3 & 4 \\ 4 & 5 & 6 & 3 & 2 \\ 5 & 5 & 2 & 5 & 3 \\ 6 & 5 & 3 & 2 & 1 \end{bmatrix} * \begin{bmatrix} 1 & 0 & 0 \\ 1 & 0 & 0 \\ 1 & 0 & 0 \end{bmatrix}$$

filter 2

$$= \begin{bmatrix} 7 & 13 & 16 \\ 11 & 15 & 14 \\ 15 & 15 & 11 \end{bmatrix} \quad \text{--- (ii)}$$

Hence, by merging equation (i) and equation (ii), we will get a matrix with the depth of 2.