Answer to the Ques. no. 2

Main Matrix =
$$\begin{matrix} 1 & 2 & 4 & 2 & 1 \\ 2 & 5 & 6 & 3 & 4 \\ 4 & 5 & 6 & 3 & 2 \\ 5 & 5 & 2 & 5 & 3 \\ 6 & 5 & 3 & 2 & 1 \end{matrix}$$ ← (5 × 5)

After 2 zero padding

$$\begin{matrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 2 & 4 & 2 & 1 & 0 & 0 \\ 0 & 0 & 2 & 5 & 6 & 3 & 4 & 0 & 0 \\ 0 & 0 & 4 & 5 & 6 & 3 & 2 & 0 & 0 \\ 0 & 0 & 5 & 5 & 2 & 5 & 3 & 0 & 0 \\ 0 & 0 & 6 & 5 & 3 & 2 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{matrix}$$ ← (9 × 9)

filter - 1 =
$$\begin{matrix} 0 & 0 & 0 \\ 1 & 1 & 1 \\ 0 & 0 & 0 \end{matrix}$$ ← (3 × 3)

By appling filter — 1

$$\begin{matrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 4 & 8 & 9 & 7 & 3 & 1 \\ 2 & 7 & 13 & 14 & 13 & 7 & 4 \\ 4 & 9 & 15 & 14 & 11 & 5 & 2 \\ 5 & 10 & 12 & 12 & 10 & 8 & 3 \\ 6 & 11 & 14 & 10 & 6 & 3 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{matrix}$$ ← (7 × 7)

filter - 2

$$\begin{array}{ccc} 1 & 0 & 0 \\ 1 & 0 & 0 \\ 1 & 0 & 0 \end{array}$$ ← (3×3)

apply
By filtering - 2

$$\begin{array}{ccccccc}
0 & 0 & 1 & 3 & 4 & 2 & 1 \\
0 & 0 & 3 & 8 & 10 & 5 & 5 \\
0 & 0 & 7 & 13 & 16 & 8 & 7 \\
0 & 0 & 11 & 15 & 14 & 11 & 9 \\
0 & 0 & 15 & 15 & 11 & 10 & 8 \\
0 & 0 & 11 & 10 & 5 & 7 & 4 \\
0 & 0 & 6 & 5 & 3 & 2 & 1
\end{array}$$
← (7×7)