Let $A = \begin{bmatrix} \sin\theta & \frac{1}{\sqrt{2}} \\ -\frac{1}{\sqrt{2}} & \cos\theta \\ \cos\theta & \tan\theta \end{bmatrix}$ and $B = \begin{bmatrix} \frac{1}{\sqrt{2}} & \sin\theta \\ \cos\theta & \cos\theta \\ \cos\theta & -1 \end{bmatrix}$. Find θ so that $A = B$.

Solution : Order is same .

$$\Rightarrow \sin\theta = \frac{1}{\sqrt{2}}$$

$$\Rightarrow \cos\theta = -\frac{1}{\sqrt{2}}$$

$$\Rightarrow \tan\theta = -1 \Rightarrow \theta = \frac{3\pi}{4}$$

A $\frac{\pi}{4}$

B $\frac{3\pi}{4}$

C $\frac{5\pi}{4}$

D $\frac{7\pi}{4}$

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