35. If $\mathbf{x}, \quad \mathbf{y}, \quad \mathbf{z}$ are all different from zero and $\begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1+y & 1 \\ 1 & 1 & 1+z \end{vmatrix} = 0$**, then value** $x^{-1}+y^{-1}+z^{-1}$ **is**

A $\mathbf{xyz}$

B $\mathbf{x^{-1}.y^{-1}.z^{-1}}$

C $\mathbf{-x-y-z}$

D -1

Ans: The correct answer is option D.

Here, we have $\begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1+y & 1 \\ 1 & 1 & 1+z \end{vmatrix} = 0$

Applying $C_1 \rightarrow C_1 - C_2$ and $C_2 \rightarrow C_2 - C_3$

$\Rightarrow \begin{vmatrix} x & 0 & 1 \\ -y & y & 1 \\ 0 & -z & 1+z \end{vmatrix} = 0$

Expanding along R_1

$\Rightarrow x(y+yz+z)+yz=0$

$\Rightarrow xy+xyz+xz+yz=0$

$\Rightarrow xy+xz+yz=-xyz$

$\Rightarrow \dfrac{xy+xz+yz}{xyz}=-1$

$\Rightarrow \dfrac{1}{z}+\dfrac{1}{y}+\dfrac{1}{x}=-1$

$\Rightarrow \dfrac{1}{x}+\dfrac{1}{y}+\dfrac{1}{z}=-1$

$\Rightarrow x^{-1}+y^{-1}+z^{-1}=-1$

Hence, option D is the correct answer.