Problem:

Convert the formula to Zhegalkin polynomial.

$(x\overline{yz}) \mid \big(x \mid (y \mid z)\big)$.

Solution:

$f(x,y,z) = (x\overline{yz}) \mid \big(x \mid (y \mid z)\big)$

For the Sheffer stroke we have:

$x \mid y = \overline{xy} \Rightarrow f(x,y,z) = (x\overline{yz}) \mid \big(x \mid (y \mid z)\big) = (x\,\overline{yz}) \mid (x \mid \overline{yz}) = (x\,\overline{yz}) \mid (\overline{x \cdot \overline{yz}}) =$

$\boxed{\begin{array}{c}\text{De Morgan's law}\\ \overline{xy} = \bar{x} \vee \bar{y}\end{array}} \Rightarrow = (x\,\overline{yz}) \mid (\bar{x} \vee \overline{\overline{yz}}) = (x\,\overline{yz}) \mid (\bar{x} \vee yz) = \overline{x \cdot \overline{yz} \cdot (\bar{x} \vee yz)} = \boxed{x \cdot \bar{x} \Rightarrow}$

$= \overline{x \cdot \overline{yz} \cdot \bar{x} \vee x \cdot \overline{yz} \cdot yz} = \overline{0 \vee 0} = \bar{0} = 1 \Rightarrow f(x,y,z) = 1$, this is the desired Zhegalkin polynomial of the function $f(x,y,z)$ (in this case the polynomial is a constant, i.e., only the free term is nonzero).