

$$\begin{aligned}
 \frac{1}{2} \quad (1011011.001)_2 &= 1 \cdot 2^6 + 0 \cdot 2^5 + 1 \cdot 2^4 + 1 \cdot 2^3 + 0 \cdot 2^2 + \dots \\
 &\quad \dots + 1 \cdot 2^1 + 1 \cdot 2^0 + 0 \cdot 2^{-1} + 0 \cdot 2^{-2} + \dots \\
 &\quad \dots + 1 \cdot 2^{-3} \\
 &= (64 + 16 + 8 + 2 + 1 + 0.125)_{10} \\
 &= \boxed{(91.25)_{10}}
 \end{aligned}$$