

2. $45,001_{10} \rightarrow \text{Base}_2$

$$\begin{array}{ccccc} 4 & 3 & 2 & 1 & 0 \\ 4 & 5 & 0 & 0 & 1 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 100 & 101 & 000 & 000 & 001 \end{array}$$

$$100101000000001_2$$

or

2^i	Value	Count	RT	REM	Binary
2^4	16				
2^3	8				
2^2	4			1	
2^1	2			1	
2^0	1			1	

PART B.

1. $1011001001110101_2 \rightarrow \text{Base}_{10}$

$$\begin{array}{cccccccccccccccc} 15 & 14 & 13 & 12 & 11 & 10 & 9 & 8 & 7 & 6 & 5 & 4 & 3 & 2 & 1 & 0 \\ 1 & 0 & 1 & 1 & 0 & 0 & 1 & 0 & 0 & 1 & 1 & 1 & 0 & 1 & 0 & 1 \end{array}$$

$$\begin{aligned} & (1 \times 2^{15}) + (0 \times 2^{14}) + (1 \times 2^{13}) + (1 \times 2^{12}) + (0 \times 2^{11}) + (0 \times 2^{10}) \\ & + (1 \times 2^9) + (0 \times 2^8) + (0 \times 2^7) + (1 \times 2^6) + (1 \times 2^5) + (1 \times 2^4) \\ & + (0 \times 2^3) + (1 \times 2^2) + (0 \times 2^1) + (1 \times 2^0) \end{aligned}$$