Problem A 5-bit binary string "10110" is to be transmitted using Hamming code. I have shown below where the data bits are to be placed. Compute the values of the check bits, which go into the unfilled positions below.

bit index	9	8	7	6	5	4	3	2	1
bit value	1		0	1	1		0		

Solution Positions where the data bits are 1:

$$
\begin{array}{rll}
 & 1\ 0\ 0\ 1 & (=9) \\
\oplus & & \\
 & 0\ 1\ 1\ 0 & (=6) \\
\oplus & & \\
 & 0\ 1\ 0\ 1 & (=5) \\
= & 1\ 0\ 1\ 0 &
\end{array}
$$

Hence the check bits are "1010" and they are placed in the positions marked with * in sequence.

bit index	9	8	7	6	5	4	3	2	1
bit value	1	1	0	1	1	0	0	1	0
		*				*		*	*