- Suppose rev_4 and n_4 have same parity. $\therefore c_3 = 1$ to make sum at 4th posn. odd. Also, rev_{14} and n_{14} have same parity $\therefore c_{13} = 1$ to make sum at 14th posn. odd.
- Suppose rev_3 and n_3 have opposite parities. $\therefore$ rev_{13} and n_{13} must have opposite parities. If $c_2 = 1$, sum at 3rd position is even. $\therefore c_2 = 0$.
- If $c_{14} = 1$, sum at 15th position is even. $\therefore c_{14} = 0$.
- $(c_3 + rev_4 + n_4)/10 = c_4$ $\quad (c_{13} + rev_{14} + n_{14})/10 = c_{14}$

  $c_3 = c_{13} = 1$ $\quad rev_4 = n_{14}$ $\quad n_4 = rev_{14}$ $\quad \therefore c_4 = c_{14}$

  But $c_4 = 1$, $c_{14} = 0$

  $\therefore c_{14} = 0$ is not possible.

$\therefore$ rev_3 and n_3 have same parity, rev_{13}, n_{13} have same parity.

$\therefore c_2 = 1$ to make sum at 3rd posn. odd

$\therefore c_{14} = 1$, to make sum at 15th posn. odd

(Now, the cases for the lower bits after n_3 gets repeated)

- Suppose rev_6 and n_6 have same parity. $\therefore c_5 = 1$ to make sum at 6th posn. odd. Also, rev_{12} and n_{12} have same parity $\therefore c_{11} = 1$, to make sum at 12th posn. odd.
- Suppose, rev_5 and n_5 have opposite parities.

$\therefore rev_{13}$ and n_{13} have opposite parities.

$\therefore c_4 = 0$ to make sum at 5th posn. odd

$\therefore c_{12} = 0$ to make sum at 13th posn. odd

$(c_5 + rev_6 + n_6)/10 = c_6$ $\quad (c_{11} + rev_{12} + n_{12})/10 = c_{12}$

$c_5 = c_{11} = 1$ $\quad rev_6 = n_{12}$, $n_6 = rev_{12}$ $\quad \therefore c_6 = c_{12}$. But $c_6 = 1$, $c_{12} = 0$ (contradiction)

- $\therefore rev_5, n_5, rev_{13}, n_{13}$ have same parity

$\therefore c_4 = 1$ and $c_{12} = 1$ to make sum at 5th and 13th posn. odd respectively. (The cases for the lower bits after n_5 gets repeated)