

Tutorial-3

①

① What will be the "Hamming Distance" for all the different combinations and minimum "Hamming Distance" for given codewords.

Datawords.	Codewords.
00	00000
01	01011
10	10111
11	11111

② Find minimum "Hamming Distance" for →

- a) Detection of two errors.
- b) Correction of two errors.

③ Check whether the given codewords are linear code or not. Give justification for your answer.

Dataword	Codeword
00	00000
01	01011
10	10111
11	11111

④ In CRC, given the dataword 1010011110 and the divisor 1011

- Show the generation of codeword at ~~the~~ sender site
- Show checking of codeword at the receiver site.

⑤ In Hamming code  $C(7, 4)$

- If data word at sender location is 0101, what will be the codeword?
- If receiver receives 0001110, what ~~the~~ will be the syndrome value  $(s_2, s_1, s_0)$  and which bit is corrupted during transmission? What will be the derived dataword from received codeword?