

# Wireless Communication Systems

## Bonus Section Quiz

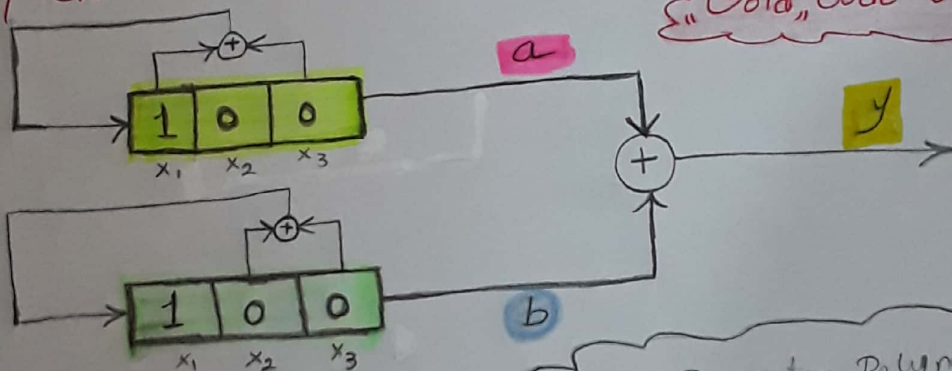
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\* Complete the following Block Diagram Table:

"Gold" Code Generator



$M_1\text{-seq}$	$M_2\text{-seq}$	a	b	y
100	100	0	0	0
110	010	0	0	0
111	101	1	1	0
011	110	1	0	1
101	111	1	1	0
010	011	0	1	1
001	001	1	1	0
100	100	repeated		

The Generator Polynomial for Constructing "Gold" Code Seq.

→ •  $G_1(x) = x^3 + x + 1$

→ •  $G_2(x) = x^3 + x^2 + 1$

Gold Codes, Size =  $2^n + 1$   
 $= 2^3 + 1$   
 $= 9 \text{ Codes.}$

Where:

- $D^M \rightarrow$  Delay/shift (if exists)
- $M_1, M_2 \rightarrow$  M-seq codes
- $G_m = M_1 \oplus D^M M_2$