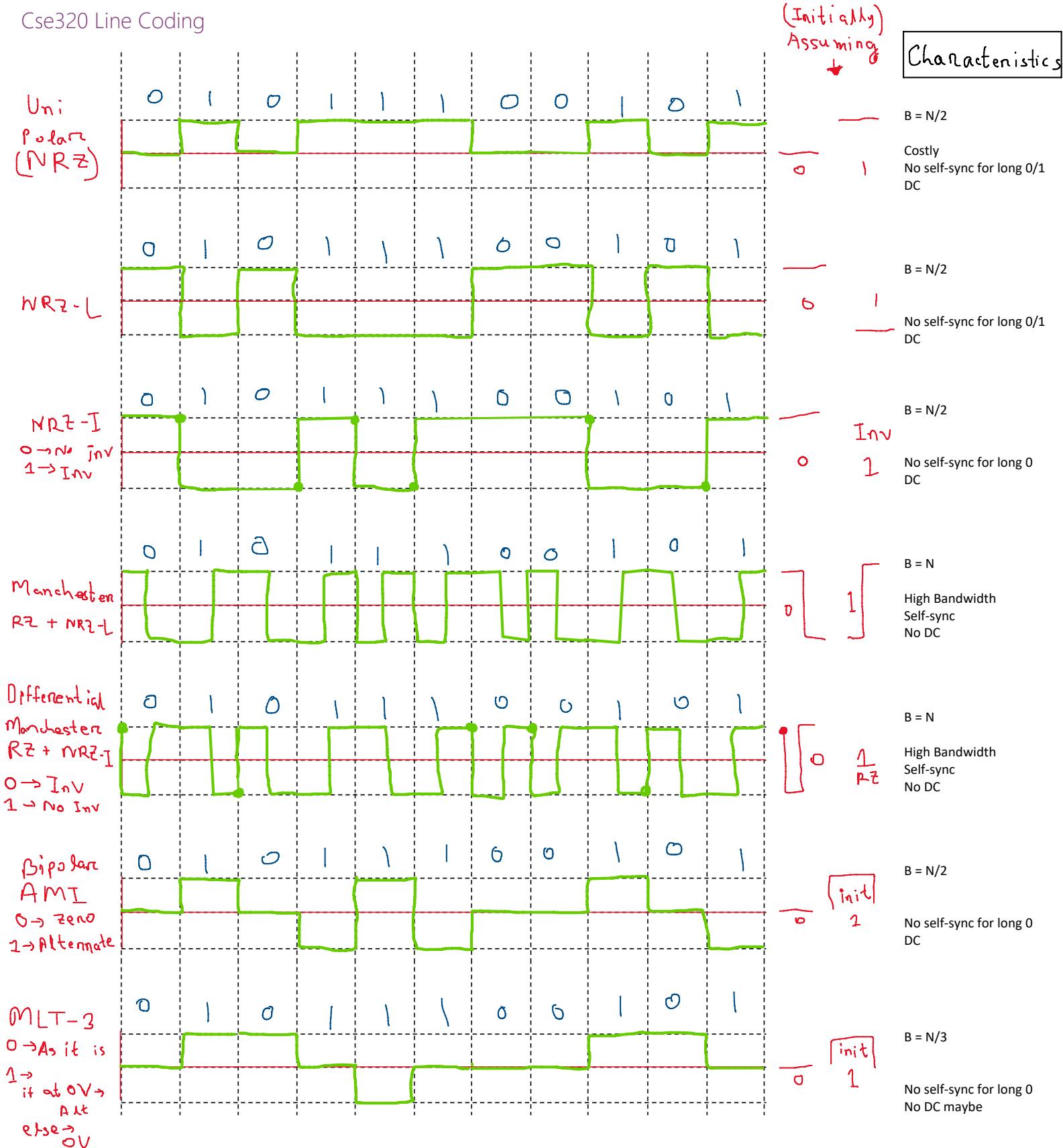
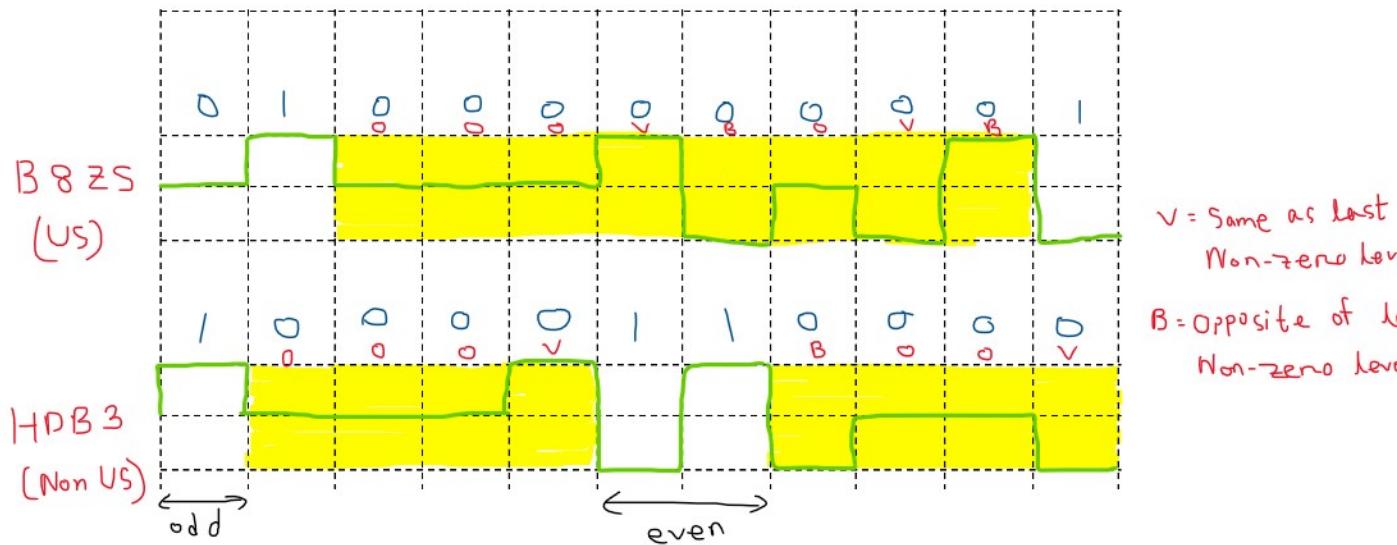


Cse320 Line Coding



Scrambling (Follows AMI)



$$L = 8$$

$$V_{max} = +20V$$

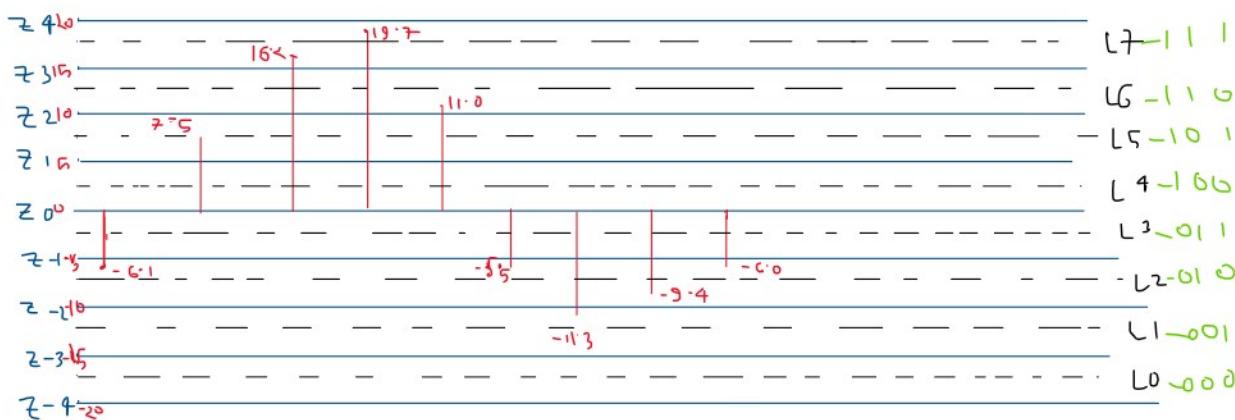
$$V_{min} = -20V$$

$$\Delta = \frac{20 - -20}{8} = 5V$$

$$\textcircled{1} \text{ PAM} = \frac{\text{data}}{D}$$

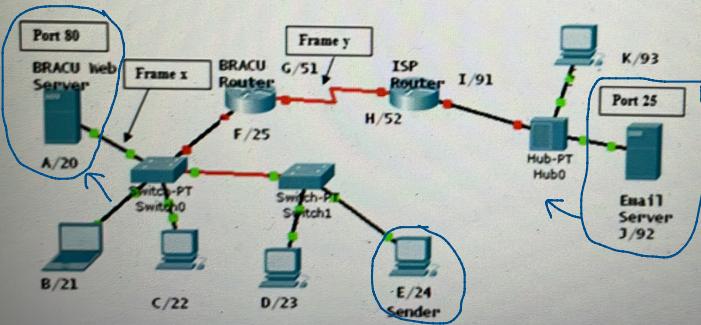
$$\textcircled{10} \text{ Quantized} = \frac{\text{Midpoint}}{\Delta}$$

$$\textcircled{11} \text{ Error} = \textcircled{10} - \textcircled{1}$$



Normalized PAM values	-1.22	1.5	3.24	3.94	2.2	-1.1	-2.26	-1.88	-1.12
Normalized quantized values	-1.5	1.5	3.5	3.5	2.5	-1.5	-2.5	-1.5	-1.5
Normalized error	-0.28	0	0.26	-0.44	0.3	-0.64	-0.24	0.38	-0.3
Quantization code	2	5	7	7	6	2	1	2	2
Encoded words	010	101	111	111	110	010	001	010	010

Q10: Complete the frames (x & y) given below with appropriate port, IP and MAC addresses. The sender Host E has two applications running; one for email with port number 49170 and the other for accessing the web server with port number 51033. The frame x is intended for the BRACU Web server and frame y is coming from the Email Server. (MAC addresses are alphabets and IP addresses are numbers) [5]



Frame X

D. Mac	S. MAC	D. IP	S. IP	D. Port	S. Port	Data	Trailer
A	E	20	24	80	51033		

Frame Y

D. Mac	S. MAC	D. IP	S. IP	D. Port	S. Port	Data	Trailer
H	J	24	92	49170	25		