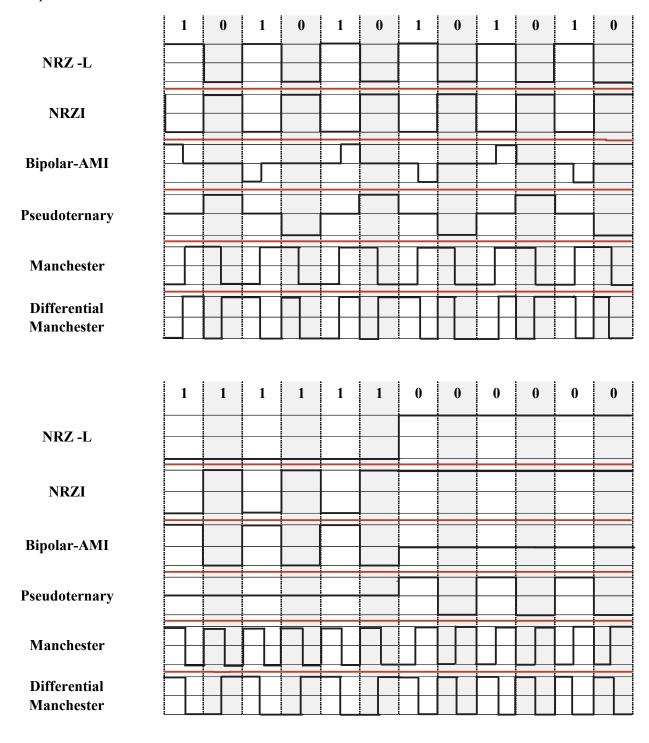
## **SY310**

## Networking & Wireless Communications *Line Coding Exercise*

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<u>Directions</u>: Sketch the encoded digital signal for each encoding scheme discussed in class using the data provided.



	1	0	0	1	1	0	0	1	1	0	0	1
NRZ -L												
NRZI												
Bipolar-AMI												
Pseudoternary												
Manchester												
Differential Manchester												
	0	1	0	0	1	1	0	0	0	1	1	1
NRZ -L	0	1	0	0	1	1	0	0	0	1	1	1
	0	1	0	0	1	1	0	0	0	1	1	1
NRZ -L	0	1	0	0	1	1	0	0	0	1	1	1
NRZ -L NRZI	0	1	0	0	1	1	0	0	0	1	1	1
NRZ -L NRZI Bipolar-AMI	0	1	0	0	1	1	0		0	1	1	1

## Compare each scheme in terms of spectrum, clocking, error detection, and cost/complexity.

_	Spectrum	Clocking	<b>Error Detection</b>	Cost/Complexity
NRZ -L	0 = high	any drift in clacking regults in 1955 of Synchronisppan	differential encoding, move reliable	Very Simple,  De component  lack of Byneromization
NRZI	0 : Low 1 = high	ang drift in clocking results in 1865 of Synchronication	differential encoding, more reliable manual technology	Very Simple, De component lack of Bynerovisation
Bipolar-AMI	s No up Hage    - alternating low/nigh	No clock drift easy sync	Simple means of error detection	-NO DC COMPONENT -USES 16.55 Bendwidth -requires 3 signs! levels (Not efficient) -more Signal Power
Pseudoternary	0 = alternating 1 = upltage	Built in clock No Clock drift easy sync	Built in arror detection	-NO DC COMPONENT -USES 1855 BBMGwidth -requires 3 sgnol kulls (Not assumt) -more Signal Power
Manchester	O= high to low  1=low to high  Mid bit transmission	-Clock Sync because there is a new Pulse every bit	error detection because there is a pulse over bit; easily to detect	- NO DC Company+ - More Complex - More Bus - higher modulation role
Differential Manchester	0: additional transition @ start 1: mid-bit transmission	-Clock Sync because there is a new Pulse every bit	error detection because there is a pulse over bit; easy to detect	-NO DC Compenent -more Complex -more Bus -higner modulation rate