## Solution to ECE Test 11 S09

1.	(Unstable includes marginally stable.)				
2.	E,F,G,I  Which stable systems have a frequency response of zero at $\Omega = 0^{\circ}$ B,D	?			
3.		π?			
4.					
5.					
6.					
	A B	$\begin{array}{c} C \\ \downarrow \\ D \end{array} \qquad \downarrow \qquad$			
	x[n] $y[n]$ $y[n]$ $y[n]$ $y[n]$	-1.2728 D 0.81			
	D E	x[n] F			
	$x[n] \xrightarrow{\qquad \qquad } y[n] \qquad x[n] \xrightarrow{\qquad \qquad } y[n]$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			
	G H	I			
	x[n] $x[n]$ $y[n]$ $y[n]$ $y[n]$ $y[n]$ $y[n]$	$y[n] \qquad x[n] \longrightarrow y[n]$ $\downarrow \qquad \qquad \downarrow \qquad \qquad \qquad \downarrow \qquad \qquad \qquad \qquad \downarrow \qquad \qquad \qquad \downarrow \qquad \qquad \qquad \qquad \downarrow \qquad \qquad \qquad \qquad \downarrow \qquad \qquad \downarrow \qquad \qquad \downarrow \qquad \qquad \qquad \downarrow \qquad \qquad \qquad \downarrow \qquad \qquad \qquad \qquad \downarrow \qquad \qquad \qquad \qquad \qquad \downarrow \qquad \qquad$			

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1.	Identify by letter the systems be (Unstable includes marginally s					
	B,D,E,H	tuoie.)				
2.		equency response of zero at $\Omega =$	0?			
	F,I	-quency response of 2010 at 22				
3.		equency response of zero at $\Omega$ =	$\pm \pi$ ?			
	None					
4.		equency response that is monotor	nic in the frequency range $0 < \Omega < \pi$ ?			
•	Which stable systems have a frequency response that is monotonic in the frequency range $0 < \Omega < \pi$ ? (Monotonic means always increasing or always decreasing.)					
	C,F,I	rasing of arways accreasing.				
5.	Which stable systems have all t	heir poles at $z = 0.9$				
٠.	F	hen poies at $z = 0$ .				
6.	_	os on the unit circle in the z plane	9			
0.	A,F,G,I,	is on the time energy in the z plane	•			
	A,1,0,1, A	В	С			
	11	Ь	C			
	x[n]	→ y[n] x[n] → →	_			
	· · · · · · · · · · · · · · · · · · ·	, , , , , , , , , , , , , , , , , , ,	<u> </u>			
			D			
		-1.5556	y[n] $x[n]$ $y[n]$			
		Ť	<u>+</u>			
			D    D			
	0.81	1.21	-0.8			
	D	E	F			
	x[n] ++					
	† <del> </del>					
	[년]					
		→ y[n] x[n] → +	y[n] $x[n]$ $y[n]$			
	📩					
	뿌,		ᆝ			
			-1			
	G	Н	I			
	G	п	1			
	x[n] • (1)	v[n]x[n]				
		y[n]^[n] +				
	-1.2728	-0.3	$\rightarrow$ $V[n]X[n]$ $\rightarrow$ $(+)$ $V[n]$			
	Ψ -	Ψ - Ψ	yearen ‡			
	D	D	D			
	0.81	-1.08 -0.6	-0.8 -1			

## Solution to ECE Test 11 S09

1.	(Unstable includes marg	ems below that are unstable. inally stable.)		_	
2.	B,E Which stable systems have a frequency response of zero at $\Omega = \pm \pi$ ?				
3.					
4.	None Which stable systems have a frequency response that is monotonic in the frequency range $0 < \Omega < \pi$ ?  (Monotonic means always increasing or always decreasing.)  G,B,E				
5.		ve all their poles at $z = 0$ ?		_	
6.		ve zeros on the unit circle in the z pla	lane?	_	
	Α Α	В	С		
	x[n]	$y[n]  x[n] \xrightarrow{-1} y[n]$	x[n] $y[n]$ $y[n]$		
	D	Е	F		
	x[n] $D$ $C$	$y[n] x[n] \xrightarrow{\downarrow} \bigoplus_{-0.8} \bigcup_{-1}$	$x[n] \xrightarrow{0.3} D$ $-1.08 \xrightarrow{0.6}$ I	y[n]	
	x[n] + +	x[n]  y[n] $0.81$	$x[n] \xrightarrow{\bullet} y[n]$ $x[n] \xrightarrow{\bullet} y[n]$		