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b. Analyse the performance of discrete-time integrator and obtain the response for the constant 10		
10		
	input voltage.	10
UNIT - IV		

## 7 a. For a three stage ring oscillator, obtain the expression for frequency of oscillations and minimum gain for sustained oscillations. Plot the poles for $0 < A_0 < 2$ , $A_0 = 2$ and $A_0 > 2$ . 10

b. For a Colpitts oscillator obtain an expression for oscillations and minimum gain for sustained 10 oscillations.

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8 a. Discuss two methods to generate negative resistance that can be used in oscillator circuit.	10	
b. What is VCO? Briefly explain the important performance parameters of VCO.	10	
UNIT - V		
9 a. With the help of a block diagram, explain the working of a simple PLL. Draw and explain	10	
the waveform in PLL under locked conditions.		
b. Explain the working of a phase/frequency detector with relevant diagrams.	10	
10 a. Explain the process of frequency multiplication and frequency synthesis.	10	
b. Discuss the skew and jitter reduction of PLL system.	10	

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