Duration: 3hrs **[Max Marks:80]**

N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

1		Attempt any FOUR	[20]
	a	What is low level and high level modulation?	
	b	Define: a) Signal to Noise Ratio b) Selectivity c) Sensitivity	
	c	Why is VSB amplitude modulation used in television broadcasting?	
	d	What is aperture effect? How to avoid it?	
	e	What is multiplexing? State its advantages.	
2	a	How is FET reactance modulator capable of generating FM signal? Use neat circuit diagram to explain the same.	[10]
	b	Derive the wave equation for AM wave. Draw the time domain and frequency domain representation of AM wave.	[10]
3	a	Explain the working of ratio detector as FM demodulator. What are its advantages over balanced slope detector?	[10]
	b	What is sampling? State and prove sampling theorem for low pass signals.	[10]
4	a	Explain TDM transmitter and receiver block diagram.	[10]
	b	Explain the working of ISB receiver.	[10]
5	a	Define noise factor and noise figure. Determine the overall noise factor and noise figure for three cascaded amplifiers with the following parameters: A 1 =3dB, A 2 =13dB, A 3 =10dB, NF 1 =10dB, NF 2 =6dB NF 3 =10 dB	[10]
	b	Explain the working of diode detector. How is practical diode detector different from diode detector?	[10]
6	a	Explain indirect method of FM generation with the help of relevant phasor diagrams	[10]
	b	Explain DPCM	[5]
	c	Compare PAM, PWM and PPM	[5]

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