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	Explain the block diagram of Communication system.	
	b	Define: a) Image frequency b) Modulation c) Selectivity	
	c	Why is VSB amplitude modulation used in television broadcasting?	
	d	What is Pre-emphasis and De-emphasis.	
	e	What is multiplexing? How it is useful.?	
2	a	Explain block diagram and waveform of Armstrong Method.	**[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 foster Seeley discriminator.	**[10]**
	b	What is sampling? State and prove sampling theorem for low pass signals.	**[10]**
4	a	Explain FDM transmitter and receiver block diagram.	**[10]**
	b	What are the errors occur in delta modulation and how those are overcome using ADM ?	**[10]**
5	a	State and explain Friss formula and define Equivalent Noise Temperature.	**[10]**
	b	Explain the working of diode detector. How is practical diode detector different from diode detector?	**[10]**
6	a	Draw block diagram of Super heterodyne receiver and explain its characteristics.	**[10]**
	b	What is aliasing error and aperture effect?	**[5]**
	c	Compare PAM, PWM and PPM	**[5]**

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