Code No: R22041   **R10**   SET - 1

II B. Tech II Semester Supplementary Examinations, April/May-2017
ANALOG COMMUNICATIONS
(Electronics and Communications Engineering)

Time: 3 hours   Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1.	a)	Explain the collector modulation method for generating AM wave with a neat circuit diagram and waveforms.	(8M)
	b)	What is the principle of square law detector and explain with a neat circuit diagram	(7M)
2.	a)	Explain the working of suppressed carrier balanced modulator. State its advantages and applications.	(8M)
	b)	Draw the block diagram of Costas loop for the detection of original signal from DSB-SC wave and explain its working	(7M)
3.	a)	Draw the block diagram of phase cancellation SSB generation and explain how the carrier and the unwanted-side band are suppressed.	(8M)
	b)	Consider a base band signal m(t) containing frequency components at 100,200 &400Hz, this signal is applied to a SSB modulator together with a carrier at 100 kHz with only upper sideband is retained. If the coherent detection is used to recover the m(t) and the local oscillator frequency supplies a sine wave frequency of 100.02 kHz, determine the frequency components in the detected output	(7M)
4.	a)	How the FM is generated using Armstrong method, explain with a neat block diagram	(8M)
	b)	Compare AM with FM. With all possible cases.	(7M)
5.	a)	Derive an expression for SNR for DSB system	(8M)
	b)	Discuss the threshold effect in Angle modulation	(7M)
6.	a)	How the frequency stability is obtained using AFC?-discuss.	(8M)
	b)	Explain each block of the AM transmitter block diagram with high level modulation	(7M)
7.	a)	Discuss the factors influencing the choice of intermediate frequency (IF) for a radio receiver.	(8M)
	b)	In a broadcast super heterodyne receiver having no RF amplifier, the loaded Q of the antenna coupling circuit is 100. If the IF frequency is 455 kHz, determine the image frequency and its rejection for tuning at 25MHz.	(7M)
8.	a)	Explain the operation of Time Division Multiplexing with the help of neat sketches.	(8M)
	b)	Distinguish the merits and demerits of PAM	(7M)