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BIEL-014

B.Tech. – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (BTECVI)

Term-End Examination

00655

June, 2019

BIEL-014 : ANALOG COMMUNICATION

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***seven*** *questions. Use of scientific calculator is allowed.*

1.	(a)	Distinguish between SSB and VSB.	*5*
	(b)	Distinguish between AM and FM.	*5*
2.	(a)	What is frequency division multiplexing ?	*3*
	(b)	What is modulation and demodulation ?	*5*
	(c)	Write the modulation index in FM.	*2*
3.	(a)	What is meaning of random variable ?	*2*
	(b)	Define correlation function.	*3*
	(c)	Explain coherent detection.	*5*
4.	(a)	What is Costas loop ?	*5*
	(b)	Compare different amplitude modulation schemes.	*5*
5.	(a)	Describe non-linear effects in FM systems.	*5*
	(b)	Give frequency domain description of SSB.	*5*

6. A carrier signal of 10 cos $2\pi \times 10^6$ t is amplitude modulated by a message signal of 4 cos $4\pi \times 10^4$ t with $\mu = 0{\cdot}5$. Antenna resistance is given by 5 Ω.

Find : *10*

(a) Side band power

(b) Total power

(c) Carrier power and Bandwidth

(d) Plot spectrum and identify spectral components

7. (a) What is single-tone modulation ? *2*

(b) Explain briefly, PLL. *5*

(c) Discuss the properties of autocorrelation function. *3*

8. (a) Define Pre-emphasis and De-emphasis. *5*

(b) Discuss the generation of VSB modulated wave. *5*

9. (a) Discuss the types of noise introduced in communication systems. Also explain each one of them briefly. *5*

(b) Write the application of Hilbert transform. *2*

(c) Compare bandwidth requirement of all AM modulation schemes. *3*

10. Write short notes on any ***two*** of the following : *2×5=10*

(a) Direct FM Generation

(b) Switching Modulator

(c) Quadrature Carrier Multiplexing
