CONTINUOUS INTERNAL EVALUATION- 2

Dept: EC	Sem / Div: V	Course: Principles of Communication Systems	Course Code: 18EC53
Date:02/12/2020	Time: 9:30-11:00	Max Marks: 50	Elective:N

Note: Answer any 2 full questions, choosing one full question from each part.

Q N		Questions	Marks	RBT	COs
		PART A			
1	a	What are the types of noise, which affect communication system? Explain thermal noise in detail.	8	L1	CO3
	b	Show that the figure of merit of a noisy FM receiver for single tone modulation is $3/2\,\beta^2$	10	L3	CO3
	c	State sampling theorem for band limited signals. Explain the process of sampling.	7	L2	CO4
		OR			
2	a	Define white noise. Plot PSD and ACF of white noise.	6	L1	CO3
	b	Explain the pre-emphasis and de-emphasis in frequency modulation with circuit and graph.	6	L2	CO3
	c	Find the FOM when the depth of modulation of AM system when: i)100%, ii)50% iii)30%	7	L3	CO3
	d	Determine the Nyquist rate and Nyquist interval for: i)g(t)=sin c(200t) ii)m(t)=sin(500Πt)	6	L3	CO4
		PART B			
3	a	With neat diagram, explain about AM noise receiver and obtain the FOM	8	L2	CO3
	b	Determine the noise equivalent bandwidth of low pass filter	9	L2	CO3
	c	The signal g(t)=10 cos (40πt) cos(400 πt) is sampled at the rate of 500samples per sec i. Determine the Nyquist rate ii. Calculate the cut off frequency of ideal reconstruction filter iii. Draw the spectrum	8	L3	CO4
		OR			
4	a	With neat diagram, explain a DSB-SC receiver using coherent detection. Show that figure of merits for such receiver is unity.	8	L2	CO3
	b	Write short notes on capture effect	5	L1	CO3
	c	An AM receiver operating with a sinusoidal modulating signal has the following specifications. M=0.8 and $[SNR]_O$ = 30dB. What is the corresponding signal to noise ratio.	6	L3	CO3
	d	Expalin the concept with block diagram of TDM system.	6	L2	CO4

Prepared by:Nirupama K 01/12/2020

HOD 21/12/2020