



BRAINWARE UNIVERSITY

Term End Examination 2023 Programme – BCA-2018 Course Name - Communication Systems Course Code - BCA203A (Semester II)

Time: 3:0 Hours Full Marks: 70 [The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A 1 x 15=15 (Multiple Choice Type Question) Choose the correct alternative from the following: (i) Which of the following is a pulse time modulation scheme? b) PWM a) PAM d) DM c) PCM (ii) Delta modulation uses _____ bits per sample. b) Two a) One d) Eight c) Four (iii) Which of the following modulation technique is most affected by noise? b) PSK a) ASK d) None of these c) FSK (iv) Which of the following modulated signals can be detected by an envelop detector? b) DSB-FC a) DSB-SC d) SSB-SC c) FM (v) Define one of the drawbacks of FM signal. b) limited range a) high noise d) none of these c) low signal strength (vi) In generation of modulated signal, a varactor diode can be used for_ b) AM generation only a) FM generation only d) both AM and PM generation c) PM generation only (vii) Companding is used b) in PCM transmitters, to allow amplitude a) to overcome quantizing noise in PCM

(viii) Calculate the ratio of modulating power to total power at 100 percent modulation?

c) to protect small signals in PCM from

quantizing distortion

a) 0.04375

limited in the receivers

b) 0.0430555555555556

d) in PCM receivers, to overcome impulse

	-1.0.0001445055555555	d) none of these		
(iv)	c) 0.08541666666666665			
(IX)	Ring modulator is generally used for	b) generating DSB-FC signal		
	a) generating SSB-SC signal	d) none of these		
	c) generating DSB-SC signal	a) none of these		
(x)	(x) When the modulating frequency is doubled, the modulation index is halved, and the			
modulating voltage remains constant. The modulation system is				
	called			
	a) amplitude modulation	b) phase modulation		
/:\	c) frequency modulation	d) any of three		
(xi) The biggest disadvantage of PCM is			ing	
	a) its inability to handle analog signals	b) the high error rate which its quantiz	iiig	
		noise introduces	red for	
	c) its incompatibility with TDM	d) the large bandwidths that are require	eu ioi	
(vii)	Define PAM	it		
(XII)				
	a) analog pulse modulation	b) digital pulse modulation		
	c) binary pulse modulation	d) none		
(XIII)	Which of the following is considered as an AM	signal?		
	a) BPSK	b) DPSK		
,	c) Differential encoded PSK	d) QPSK		
(XIV)	One of the following system is analog	·		
	a) PCM	b) DM		
٠.	c) DPCM	d) PAM		
(xv)	Shot noise is produced by			
	a) Electrons	b) Photons		
	c) Electrons & Photons	d) none of these		
Group-B				
	(Short Answer	Type Questions)	3 x 5=15	
2 4				
2. A certain transmitter radiates 12 KW with unmodulated carrier and 15 KW when the carrier (3)				
IS	is sinusoidally modulated. Calculate the modulation index. If another sine wave			
ra	rresponding to 25% modulation is transmitted diated power.	simultaneously, determine the total		
	rite short note on flicker noise.			
			(3)	
4. With neat block diagram, explain the reception of Delta Modulation.5. Briefly explain Pulse Amplitude Modulation.			(3)	
6. The carrier wave is represented by the equation . Draw the wave form of an AM wave for			(3)	
m=0.5 (3)			(3)	
	C	PR		
Di	aw the waveforms at input and output of an er		(2)	
		a detector	(3)	
	Gro	up-C		
		ype Questions)		
		77- 4403(10)13/	5 x 8=40	
7. Draw the circuit diagram of balanced slope detector and explain its operation. (5				
ο. ι	o. Discuss the effects of thermal noise on nower voltage and account.			
9. \	9. With the net block diagram explain the principle of SSB-SC generation by phase shift (5)			
•	ictiiou.		(5)	
10. \	Vith the help of block diagrams explain the trar	ismitter and receiver of nutsease.		
10. With the help of block diagrams explain the transmitter and receiver of pulse code modulation. (5)				
11. \	Vith the help of neat circuit diagram, explain th	e operation of an envelope datasta	(5)	
		an envelope detector.	(5)	

(5)
(5)
(5)
(5)
