12/26/11 Code: A-20

Diplete - ET (OLD SCHEME)

Code: DE12		Subject: COMMUNICATION ENGINEERING
Fime: 3 Hours		Max. Marks: 100
	LILINE COAC	

JUNE 2010

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- Out of the remaining EIGHT Questions, answer any FIVE Questions. Each question carries 16 marks.

C	Choose the correct or the bes	(2×10)			
a	. The Very High Frequency (V				
	(A) 3-30 MHz (C) 300-3000 MHz	(B) 30-300 MHz(D) 3000-30000 MHz			
b	Pre-emphasis is used to improve noise immunity				
	(A) at higher baseband frequ(B) at lower baseband frequ(C) over the entire baseband(D) for AM	nencies			
c.	. In commercial FM broadcast	ing, the maximum frequency deviation is no	rmally		
	(A) 5 kHz (C) 75 kHz	(B) 15 kHz (D) 200 kHz			
d.	Picture information is transmitted in T.V. signals by				
	(A) AM (C) PAM	(B) FM(D) None of these			
e.	In a PCM system, the quantization noise depends upon				
	 (A) The number of quantization level only (B) The sampling rate only (C) Both the sampling rate and the number of quantization levels (D) None of the above is correct 				
f.	The dominant mode in a rectangular waveguide is				
	(A) $^{\text{TM}}_{01}$ (C) $^{\text{TE}}_{10}$	(B) TE ₀₁ (D) TEM			
g.	-	e normally propagate by means of (B) sky waves			
	(A) ground waves(C) surface waves	(D) space waves			

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	h.	Indicate which of the following systems is digital?					
		(A) Pulse-position modulation(C) Pulse-width modulation.	(B) Pulse-code modulation.(D) Pulse-frequency modula	ition.			
	i.	In commercial T.V. transmission in as:	re	modulated respective	ly		
		(A) VSB and VSB.(C) VSB and FM.	(B) VSB and SSB.(D) FM and VSB.				
	j.	Thermal noise power is proportional	ıl to				
		(A) $\sqrt{\mathbb{B}}$ (C) $\sqrt{\mathbb{B}T}$	(B) √T(D) BT				
		· ·	FIVE Questions out of EIGHT ach question carries 16 marks	-		_	
Q.2	a.	What is noise? Explain various sour	rces of noise.	(8)			
		b. What is bandwidth of informat	ion signals? Explain the relations (8)	hip between bandwid	Ith and channel capacity.		
Q.3	a.	What is amplitude modulation? Der	ive an expression for amplitude m	odulated wave.	(8)		
		b. A transmitter with 20 kW carr modulation index, if the carrier is stotal transmitted power.		_			
Q.4	a.	Explain following terms: S (i) Noise figure.		(8)			
	b.	State advantages and disadvantages	s of SSB transmission over DSB t	transmission.	(8)		
Q.5	â	a. Estimate the Bandwidth and Po	wer of an FM signal given by ⁶	$e_{\rm FM}(t) = 10\cos(2\pi \times t)$	$10^6 \text{t} + 0.1 \sin 2\pi \times 10^3 \text{t}$		
	b.	Compare PAM, PWM and PPM.		(8)			
Q.6	a.	Draw the block diagram of PLL and	d briefly explain its working.	(8)			
		b. What are different mode	s of radio wave propagation? (8)	Describe ground way	ve propagation briefly.		
Q.7	a.	Describe briefly different sources of	Closses in optical fibres.	(8)			
	b.	Describe following terms for antenn	a: (8)				

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- (i) Polarisation. (ii) Bandwidth.
- (iii) Antenna Gain.

a. State the advantages and disadvantages of satellite communication. **Q.8 (8)**

b. Explain the working of a balanced slope detector using suitable diagram.

(8)

a. Describe briefly the use of blanking and synchronizing pulses in T.V. signals. **Q.9**

(8)

b. What is sampling theorem for low pass signal? Explain it briefly

(8)