2703E1365

B.Sc. Semester-5 Examination

CC 304

Electronics

March-2024

Candidate's Seat No : _____

Time : 2-30 Hours] **[Max. Marks : 70**

Instruction : (1) Figures to the right side indicate full marks
(2)Symbols have their usual meaning

Q. I		
A)	Define AM and Derive the equation for Modulation Index $m = E_m/E_c$ for amplitude modulation	07
B)	Prove AM power distribution $P_{Total} = 1.5\ Pc$	07
	OR	
Q-I		
A)	Explain how Diode work as detector	07
B)	**Calculate following examples** **(1)** Communication transmitter radiates a 500W amplitude modulated signal. if carrier power is 350W . Calculate the modulation index. (2) 1KW Carrier is modulated to a depth 60%. Calculate the total power and the sideband power of the modulated wave	07
Q.II		
A)	Compare AM and FM in detail	07
B)	Draw the Frequency spectrum for sinusoidal FM and explain in detail	07
	OR	
Q.II		
A)	Explain general theory of PM .	07
B)	Explain equivalence between PM and FM	07
Q. III		
A)	Write notes on basic antenna principles	07
B)	Discuss following terms of antenna in detail (1) Beam width (2) Polarization	07
	OR	
Q-III		
A)	Explain (1) Loop Aerial,(2) folded dipole	07
B)	Discuss following terms of antenna in detail (1) Antenna pattern (2) Radiation resistance	07
Q.IV		
A)	Explain space segment and ground segment in detail	07
B)	Write short note on Television	07
	OR	
Q.IV		
A)	Draw satellite earth station block diagram and explain any two block in detail	07
B)	Write notes on INSAT	07

P.T.O

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Q-V	**Attempt any seven out of twelve**	14
(A)	What is diagonal Peak Clipping?	
(B)	Explain need of modulation and demodulation?	
(C)	What do you mean by side band in AM?.	
(D)	What do you mean by frequency deviation constant in FM?	
(E)	Δf=75 kHz fm= 0.1 kHz , Calculate the value of B_{FM}	
(F)	What is angle modulation?	
(G)	Define :Band width	
(H)	Define :Directive gain	
(I)	What do you mean by dipole?	
(J)	Full form of INTELSAT is _____	
(K)	Full form of SCPC is _____	
(L)	INTELSAT V has _____ feed antenna.	