PRN:		Course Code :	ECE207R1

Second Year **B. Tech** End Semester Examination Winter 2024

Communication Engineering-I 000934

Day and Date: Fri 29 NOV 2024 Max Marks: **100**

Time : 10:30AM To 01:30PM Duration: **03** hrs

Instructions: All questions are compulsory.

			Marks	Bloom's Level	CO
Q.1		**Attempt the following**			
	a)	Derive Power relations in DSBFC and DSBSC modulation.	08	2	1
	b)	A 400 W carrier is amplitude modulated to a depth of 100%. Calculate the total power in case of AM and DSBSC techniques.	08	3	1
		OR			
	b)	Explain SSB modulation in detail.	08	2	1
Q.2		**Attempt the following**			
	a)	Illustrate AM Receiver with block diagram.	08	2	2
	b)	Describe any four receiver parameters.	08	2	2
		OR			
	b)	Describe distortions in diode peak detector.	08	2	2
Q.3		**Attempt any two from the following**			
	a)	Explain Frequency Modulation with neat diagram.	08	2	3
	b)	In an FM system, when the audio frequency is 500Hz and the AF voltage is 2.4V, the deviation is 4.8kHz ,calculate modulation index.	08	3	3
	c)	Compare AM and FM modulation techniques.	08	4	3
Q.4		**Attempt any two from the following**			
	a)	Describe the working of Ratio Detector with neat diagram.	08	2	3
	b)	Explain PLL-FM demodulator with block diagram.	08	2	3
	c)	Illustrate Pre-emphasis and De-emphasis in detail.	08	2	3
Q.5		**Attempt any Two of the following**			
	a)	Define PWM. Describe pulse width modulation with neat waveforms.	09	2	4
	b)	Describe pulse amplitude modulation in detail.	09	2	4
	c)	Illustrate pulse position modulation technique.	09	2	4
Q.6		**Attempt any Two of the following**			
	a)	Comment on signal to noise ratio and noise figure.	09	3	4
	b)	Derive FRISS formula for noise figure.	09	4	4
	c)	Describe Thermal noise and shot noise in detail.	09	2	4

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