Reg. No.												

Question Paper Code	12241

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Sixth Semester

Electronics and Communication Engineering

20ECPC603 - WIRELESS COMMUNICATION

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	List the assumptions made in the free space propagation model.	*2,K1,CO1*
2.	Give the significance of power Delay Profile.	*2,K1,CO1*
3.	What is a multiple access scheme?	*2,K1,CO2*
4.	List any four important features of FDMA.	*2,K1,CO2*
5.	What is a handoff? List its types.	*2,K1,CO3*
6.	Define: Cell dragging.	*2,K1,CO3*
7.	State the advantages of offset-QPSK.	*2,K1,CO4*
8.	What are the Properties of GMSK?	*2,K1,CO4*
9.	State the significance of linear and decision feedback equalizer.	*2,K1,CO5*
10.	Draw the structure of linear traversal equalizer.	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Derive the expression for the path difference phase difference time delay and field strength in a two Ray propagation model.	*13,K2,CO1*
		OR	
	b)	Discuss on the timing parameters of the wireless channels and classify the channels based on the discussion.	*13,K2,CO1*
12.	a)	Describe the working principle of TDMA systems. Also, derive the expression to calculate the efficiency and the number of channels supported by the system.	*13,K2,CO2*
		OR	
	b)	Describe the working principle of the CDMA system. Also, list out the features of CDMA system.	*13,K2,CO2*
13.	a)	Explain about the techniques to improve the capacity of cellular systems in detail.	*13,K2,CO3*

OR

b) Explain in detail about co-channel interference and adjacent channel interference with relevant diagrams. *13,K2,CO3*

14. a) What is π/4 QPSK? Describe the Transmitter and receiver techniques with diagrams. *13,K2,CO4*

OR

b) (i) Explain the Minimum Shift Keying Transmitter and receiver. *7,K2,CO4*

(ii) Compare the power spectral density of MSK signals with QPSK and OQPSK signals. *6,K2,CO4*

15. a) (i) What is the principle of diversity? Explain the need for diversity. *6,K2,CO5*

(ii) Explain in detail about various micro diversity techniques to combat small scale fading. *7,K2,CO5*

OR

b) What is the principle of Combining Diversity? Explain in detail about various combining techniques with neat block diagram and necessary equations. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) (i) Explain in detail the concept of Precoding. *7,K2,CO6*

(ii) Explain with relevant diagram the layered space time structure with respect to MIMO systems. *8,K2,CO6*

OR

b) Illustrate the concept behind System Model and channel state information in detail. *15,K2,CO6*