Reg. No.												

Question Paper Code	11530

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Sixth Semester

Electronics and Communication Engineering

EC8652 - WIRELESS COMMUNICATION

(Regulations 2017)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	What is small scale model?	*2,K1,CO1*
2.	Find the far-field distance for an antenna with maximum dimension of 1m and operating frequency of 900 MHz.	*2,K1,CO1*
3.	Give the frame structure of TDMA system of multiple access.	*2,K1,CO2*
4.	Compare the FDMA and OFDMA techniques.	*2,K1,CO2*
5.	Recall the two types of Channel Allocation.	*2,K2,CO3*
6.	Interpret the term blocked call clear system (BCC).	*2,K2,CO3*
7.	Identify the techniques used to improve the received signal quality.	*2,K1,CO4*
8.	List the blocks in the wireless communication link.	*2,K1,CO4*
9.	Write the importance of equalization.	*2,K2,CO5*
10.	Differentiate between micro and macro diversity	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	(i) An aircraft is heading towards a control tower with 500 kmph, at an elevation of 20◦.Communication between aircraft and control tower occurs at 900 MHz. Find out the expected Doppler shift. (ii) What are the factors influencing small scale fading?	*8,K2,CO1* *5,K2,CO1*
		OR	
	b)	Explain two-ray reflection model with relevant mathematical equations.	*13,K2,CO1*
12.	a)	Explain in detail with neat diagram the different multiple access Techniques.	*13,K2,CO2*
		OR	
	b)	Explain in detail the CDMA technique and the modulation used in it.	*13,K2,CO2*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

13. a) Write short notes on Hand-off strategies with neat diagram and differentiate the different types of Hand-offs. *13,K2,CO3*

OR

b) Explain the different techniques used to expand the coverage area of the cellular system. *13,K2,CO3*

14. a) Explain the principles of the QPSK, offset QPSK with neat diagram. *13,K2,CO4*

OR

b) With neat diagram explain the transmitter and receiver of the MSK modulation. State the application of MSK. *13,K2,CO4*

15. a) Explain in detail the linear and non linear equalizer structure with neat diagrams with relevant mathematical equations. *13,K2,CO5*

OR

b) Explain in detail the different diversity combining techniques. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Explain in detail the MIMO system performance and beam forming with neat sketches. *15,K2,CO6*

OR

b) Derive the capacity of the non fading channel with relevant sketches. *15,K2,CO6*