Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 70051

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – JAN. 2025
Sixth Semester
Electronics and Communication Engineering
U19ECV32 – MOBILE COMMUNICATION
(Regulation 2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Interpret the different ways to increase channel capacity of a mobile network.	2	K2	CO1
2.	Recall the expression for path loss in Okumura model.	2	K1	CO1
3.	Define Doppler shift & recall the equation for Doppler frequency.	2	K1	CO2
4.	Justify the statement, "Non-linear equalizers are preferred over linear equalizers".	2	K5	CO2
5.	In a FDMA system the total spectrum bandwidth is 12.5MHz. Each channel is allocated with 30kHz & edge guard spacing is 10kHz. Find the total number of channels?	2	K1	CO3
6.	Draw the TDMA frame structure.	2	K1	CO3
7.	List the features of 4G LTE.	2	K1	CO4
8.	Compare 1G through 5G networks with respect to multiple access schemes.	2	K2	CO4
9.	Sketch the MIMO system.	2	K1	CO5
10.	Mention the frequency range of mm waves? Why it is called so?	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	What is Handoff? Discuss how handoff is accomplished in cellular mobile communication systems. Infer the different types of handoff mechanisms.	13	K2	CO1
		(OR)			
	b)	Enlist the various Indoor & Outdoor propagation models used in mobile radio system and also outline their salient features.	13	K2	CO1
12.	a)	i. Discuss the non-linear equalization method using Minimum Least Square Error (MLSE) algorithm.	8	K2	CO2
		ii. Why equalization techniques are used in mobile multipath propagation. Classify the different types of equalizers.	5	K2	
		(OR)			
	b)	Categorize the different types of small-scale fading. Explain each fading effect in detail.	13	K2	CO2
13.	a)	Compare FDMA, TDMA& CDMA types of multiple access techniques. Explain in detail about each technique.	13	K2	CO3
		(OR)			
	b)	Elaborate Packet Radio access technique along with the reservation protocols.	13	K2	CO3
14.	a)	Explain in detail the network architecture of 4G LTE wireless system.	13	K2	CO4
		(OR)			
	b)	Discuss in detail the 10 pillars of 5G wireless network.	13	K2	CO4
15.	a)	What is a MIMO system? Discuss the key challenges faced in the Wireless networks.	13	K2	CO5
		(OR)			
	b)	Discuss:			
		i. 6G Wireless energy harvesting.	7	K2	CO5
		ii. Intelligent reflective Surface.	6		

PART – C

(1 x 15 = 15Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Discuss the evolution of mobile radio communication services and compare their features.	15	K2	CO1
		(OR)			
	b)	Discuss Bluetooth technology &WLANs.	15	K2	CO1