

Test: CLAT- 1

Date:12.6.2024

Course Code & Title: 18ECC301T Wireless Communication

Duration: 3.10-4.00pm

Year & Sem: IV& VII

Max. Marks: 25

Course Articulation Matrix:

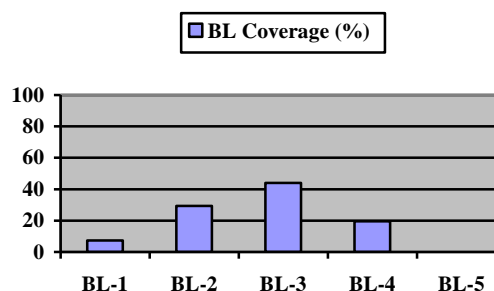
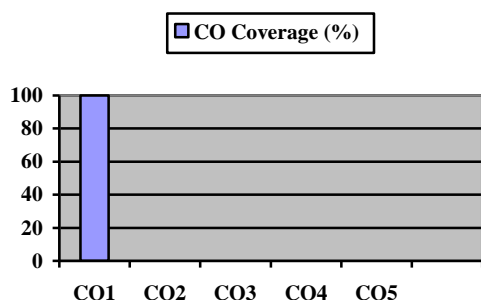
18ECC301T_Wireless Communication	PROGRAM OUTCOMES												PROGRAM STUDENT OUTCOMES		
COURSE OUTCOMES	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Interpret the concepts of Wireless communication and basic cellular networks	3	-	-	3	-	-	-	-	-	-	-	2	-	-	-
Analyze different Radio wave propagation models for cellular communication	-	3	-	3	-	-	-	-	-	-	-	-	-	-	3
Apply different multipath propagation channel models in wireless systems	-	3	3	-	-	-	-	-	-	-	-	-	-	-	2
Illustrate the Link performance improvement techniques	-	3	-	-	-	-	2	-	-	-	-	-	-	-	3
Summarize different wireless communication standards and systems	-	-	2	-	-	2	-	-	-	-	-	-	2	-	-

Part – A (5x1= 5Marks)

Q. No	Answer all the questions	Marks	BL	CO	PO
1.	During the handoff process in the cellular system, the margin (Threshold) is given by a. $\Delta = Pr(HANDOFF) - Pr(MAX. USABLE)$ b. $\Delta = Pr(HANDOFF) - Pr(MIN. USABLE)$ c. $\Delta = Pr(SAR OF THE MOBILE) - Pr(MIN. USABLE)$ d. $\Delta = Pr(CELL) - Pr(BASE STATION)$	1	1	1	1
2.	A Spectrum of 30 MHz is allotted to a cellular system which uses two 25kHz simplex channels to provide full duplex voice channels. What is the number of channel available per cell for 4 cell reuse factor? a. 150 channel b. 600 channel c. 50 channel d. 85 channel	1	3	1	4
3.	In Trunked radio system(TRS) user is allocated the channel on a. Per frequency basis b. Per call basis c. Per channel basis d. Per Base station basis	1	1	1	1
4.	What is the measure of the ability of user to access a trunked system during the busiest hour? a. Trunking b. Sectoring c. Multiplexing d. Grade of Service (GOS)	1	1	1	1
5.	What will be the total no of users if each user generates is 0.1 Erlang and the total offered traffic is 3.96. a. 39 b. 40 c. 4 d. 11	1	3	1	4
Part – B(2x 4= 8Marks)					
Answer Any two questions					

6.	Illustrate the channel assignment strategies in mobile communication.	4	4	1	4
7.	Demonstrate the importance of cell splitting in wireless networks.	4	3	1	4
8.	If a signal to interference ratio of 15 dB is required for satisfactory forward channel performance of a cellular system, what is the frequency reuse factor and cluster size that should be used for maximum capacity if the path loss exponent is 4. Assume that there are 6 co-channels cells in the first tier, and all of them are at the same distance from the mobile.	4	4	1	4
Part – C (1 x 12= 12Marks)					
Answer all the questions					
9a.	Explain through the aid of a timing diagram, the step-by-step procedure for establishing a call from a mobile subscriber to a mobile recipient.	12	3	1	12
(OR)					
9b.	Describe the term “handoff” in wireless communication systems and enumerate the different classifications of handoff with a neat diagram.	12	2	1	1

Course Outcome (CO) and Bloom’s level (BL) Coverage in Questions



Evaluation Sheet

Name of the Student:

Register No.:

Part – A (5x1= 5 Marks)					
Q. No	CO	PO	Maximum Marks	Marks Obtained	Total
1	1	1	1		
2	1	4	1		
3	1	1	1		
4	1	1	1		
5	1	1	1		
Part – B (2x 4= 8 Marks)					
6	1	4	4		
7	1	4	4		
8	1	4	4		
Part- C (1 x 12 =12 Marks)					
9a	1	1	12		
9b	1	1	12		

Consolidated Marks:

CO	Maximum Marks	Marks Obtained
1	25	
Total	25	

PO	Maximum Marks	Marks Obtained
PO-1	15	
PO-4	14	
PO-12	12	
Total	41	

Signature of Course Teacher