

**ANURAG Engineering College**  
(An Autonomous Institution)

**IV B. Tech II Semester Regular/Supplementary Examinations, April - 2024**  
**CELLULAR & MOBILE COMMUNICATIONS**  
**(ELECTRONICS AND COMMUNICATION ENGINEERING)**

Time: 3 Hours

Max. Marks: 75

**Section – A (Short Answer type questions)****(25 Marks)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. Define co-channel interference	CO1	L1	2M
2. what is meant by frequency reuse distance?	CO1	L1	3M
3. Define gain of antenna and write expression for it.	CO2	L2	2M
4. What is the significance of Diversity receiver?	CO2	L2	3M
5. Mention two advantages of Omni-directional antenna	CO3	L1	2M
6. Explain importance of cell site antennas	CO3	L2	3M
7. Give the general formula for finding dropped call rate in noise limited system and interference limited system	CO4	L2	2M
8. Define handoff. Describe its classification	CO4	L1	3M
9. What are main subsystems of GSM architecture.	CO5	L1	2M
10. Write differences between TDMA and CDMA	CO5	L1	3M

**Section B (Essay Questions)****Answer all questions, each question carries equal marks.****(5 X 10M = 50M)**

11. A) i) What is cell splitting. Explain? ii) Compare Analog and Digital cellular systems	CO1	L2 L3	5M 5M
<b>OR</b>			
B) What is the uniqueness of mobile radio environment, explain why hexagonal shaped cells are used for mobile communication?	CO1	L2	10M
12. A) i) Explain signal reflections in flat and hilly terrain contours and their influences in signal transmissions in mobile transmissions. ii) Explain constant standard deviation along a path loss curve in detail.	CO2	L2 L2	5M 5M
<b>OR</b>			
B) i) Discuss in detail about the phase difference between direct and reflected paths. ii) Explain the effect of antenna parameters in designing cellular system.	CO2	L3 L2	5M 5M
13. A) Explain the following, i) Umbrella pattern antenna.      ii) Space diversity antennas	CO3	L2	10M
<b>OR</b>			
B) Explain numbering and grouping concept in detail	CO3	L2	10M
14. A) i) What are the advantages of delayed handoff? Also explain the parameters ii) What is meant by a dropped call? Explain the factors that influence the dropped call rate.	CO4	L2 L2	5M 5M
<b>OR</b>			
B) Explain the following terms. i) Forced Handoff    ii) Hard Handoff    iii) Delaying Handoff	CO4	L3	10M

15. A) i) Explain GSM Architecture  
ii) Write a short note on TDMA and TDMA frame structure.
- OR**
- B) What is CDMA? Explain CDMA in Detail.
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|-----|----|-----|
| CO5 | L3 | 5M  |
|     |    | 5M  |
| CO5 | L2 | 10M |