



R18 Regulation

Subject code: 2E6DA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VI Semester Supplementary Examinations, December 2024

CELLULAR AND MOBILE COMMUNICATIONS (ECE)

Maximum Marks: 70

Date: 02.01.2025

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20) Marks)		CO	Bloom Tx
1	List out steps involved in operation of cellular systems.	1	L1
2	List out limitations of conventional mobile telephone system.	1	L1
3	Define cross talk.	2	L1
4	Define frequency reuse distance.	2	L1
5	List out the types of antennas used at cell site.	3	L1
6	Define foliage loss.	3	L1
7	Define frequency management.	4	L1
8	State the purpose of voice channel.	4	L1
9	Define handoff.	5	L1
10	What are the types of hand off?	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	A) Derive C/I from a normal case in an omnidirectional antenna system. [6M] B) Discuss the limitations of conventional mobile telephone system. [4M]	1	L2
OR			
12	Explain briefly different ways of improving coverage and capacity in cellular systems. [10M]	1	L2
13	Discuss about different methods to reduce the co-channel interference. [10M]	2	L2
OR			
14	A) Discuss about maximal ratio combining technique in detail. [5M] B) Write short notes on Ring combiner and Tunable combiner. [5M]	2	L2
15	Discuss about different type of antennas used at cell site. [10M]	3	L2
OR			
16	A) Explain in detail about various mobile antennas. [7M] B) Explain foliage loss in detail. [3M]	3	L2
17	A) Describe grouping of voice, set up channels. [4M] B) Write short notes on forcible borrowing channel assignment scheme. [6M]	4	L2
OR			

18	A)Write short notes on reuse partition. [4M] B)Write short notes on channel assignment to travelling mobile units. [6M]	4	L2
19	A) Explain the concept of delaying Hand off and discuss about its advantages. [6M] B) Define dropped call rate. Discuss about relationship among capacity, voice quality, dropped call rate. [4M]	5	L2
	OR		
20	Explain in detail the need for handoff and determine the probability of requirement of handoff. [10M]	5	L2