Hall Ticket Number :										

R-17

Code: 7G381

IV B.Tech. II Semester Advanced Supplementary Examinations July 2022

Cellular & Mobile Communications

(Electronics and Communication Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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		Marks	CO	Blooms Level
	UNIT–I			
1. a)	What are the limitations of conventional mobile systems and how are they overcome by cellular mobile systems?	7M	CO1	L1
b)	Explain about basic cellular mobile systems and its operations with neat diagram.	7M	CO1	L2
	OR			
2. a)	Explain how co-channel interference is measured in real time mobile radio transceiver?	7M	CO1	L3
b)	Illustrate the design of an omnidirectional antenna system in the worst case scenario.	7M	CO1	L2
	UNIT–II			
3. a)	What is near-end-far-end interference ratio and explain its effects?	7M	CO2	L1
b)	Prove that for hexagonal geometry the co-channel reuse ratio is given by Q=√3N	7M	CO2	L3
	OR			
4. a)	Explain the importance of demultiplexer at the receiver to reduce the non-co-channel interference.	7M	CO2	L4
b)	Explain the concept of lowering the antenna height to decrease the co-channel interference.	7M	CO2	L5
	UNIT–III			
5. a)	Explain the direct wave path, line of sight path, out of sight path, and obstructive path?	7M	CO3	L3
b)	What are the different types of noises in cellular frequency ranges? Illustrate with neat diagram.	7M	CO3	L2
	OR			
6. a)	What do you understand by engineering antenna pattern? Explain the corresponding pattern.	7M	CO3	L3

	b)	Explain the antenna arrangement of space diversity used at cell site.	7M	CO3	L2

UNIT–IV

7.	a)	Explain in detail about grouping of Set-up channels.	7M	CO4	L1
	b)	Illustrate the channel assignments to cell sites and mobile units with example.	7M	CO4	L3

OR

8.	a)	Write short notes on : i. channel sharing and borrowing ii. non fixed channel assignment	7M	CO4	L3
	b)	Write the concept of the self-location scheme at the mobile unit and the autonomous registration.	7M	CO4	L4

UNIT–V

9.	a)	Draw the architecture of GSM and explain how location of mobile users are tracked using the various registers.	7M	CO5	L3
	b)	Draw the TDMA frame structure for the GSM network.	7M	CO5	L2

OR

10.	a)	Write short notes on : i. Types of handoff ii. Delaying handoff	7M	CO5	L3
	b)	Write short notes on : i. Intersystem handoff ii. Vehicle locating methods	7M	CO5	L3

END