PVP 19

Code: 19EC4801A

IV B.Tech - II Semester – Regular Examinations – MAY 2023

CELLULAR AND MOBILE COMMUNICATIONS
(ELECTRONICS & COMMUNICATION ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.
4. All parts of Question paper must be answered in one place.

BL – Blooms Level CO – Course Outcome

PART – A

		BL	CO
1. a)	Differentiate between Co-channel Interference and Adjacent channel Interference.	L2	CO1
1. b)	Define Path loss in a mobile radio environment and write the formula.	L1	CO1& CO2
1. c)	Distinguish between Frequency Management and Channel Assignment.	L4	CO1& CO3
1. d)	State the advantages of Micro cells.	L1	CO1& CO3
1. e)	Mention the advantages of 5G technology.	L1	CO1& CO4

PART – B

			BL	CO	Max. Marks
UNIT-I					
2	a)	Explain the operation of Cellular system with diagram.	L2	CO1	7 M
	b)	Explain about the concept of Frequency reuse.	L2	CO1	5 M
OR					
3	a)	Derive the expression for the Cochannel Interference assuming 7 cell reuse system.	L4	CO1	7 M
	b)	Discuss the importance of Hexagonal shaped cells.	L2	CO1	5 M
UNIT-II					
4	a)	Explain the concept of phase difference between Direct and Reflected paths with derivation.	L2	CO1& CO2	8 M
	b)	Illustrate the concept of Signal reflections in Flat terrain.	L3	CO1& CO2	4 M
OR					
5	a)	With a diagram, explain about the Near distance propagation model.	L4	CO1& CO2	8 M
	b)	Explain the concept of Antenna height gain.	L2	CO1& CO2	4 M

UNIT-III					
6	a)	Interpret the purpose of given antennas in Cellular Communications. (i) Space diversity antennas (ii) Umbrella pattern antennas.	L3	CO1& CO3	7 M
	b)	Explain about Underlay-overlay arrangement.	L2	CO1& CO3	5 M
OR					
7	a)	Illustrate the functions of Setup and paging channels.	L3	CO1& CO3	6 M
	b)	Write short notes on Channel sharing and Borrowing.	L2	CO1& CO3	6 M
UNIT-IV					
8	a)	Explain the concept of Cell splitting and discuss about Cell Splitting techniques.	L2	CO1& CO3	7 M
	b)	Discuss about Delaying a Handoff.	L2	CO1& CO3	5 M
OR					
9	a)	Explain about Mobile assisted handoff.	L2	CO1& CO3	6 M
	b)	Discuss about the Vehicle locating methods.	L2	CO1& CO3	6 M

UNIT-V					
10	a)	Sketch the diagram and explain the architecture of GSM.	L3	CO1& CO4	9 M
	b)	Illustrate the features of GSM technology.	L3	CO1& CO4	3 M
OR					
11	a)	Explain about NSS and its environment.	L2	CO1& CO4	6 M
	b)	Explain about the OSI model in GSM.	L2	CO1& CO4	6 M