

Satyug Darshan Institute of Technology, Faridabad

Programme: BCA

Year:/Semester:2/4

Subject Name : Wireless Communications

Subject Code:

Department:DCSE

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Prepared By:

Unit -1

Short Questions

S. No.	Questions	Bloom Taxonomy(KL)
1	Name the three key generations of cellular networks and their primary multiple access technologies.	KL1
2	What is the primary purpose of Bluetooth in Personal Area Networks?	KL1
3	Define WLL (Wireless Local Loop) in one sentence.	KL1
4	State two major advantages of digital cellular systems over analog systems.	KL1
5	How does GSM differ from CDMA in terms of channel access?	KL2
6	What is the role of a base station in a wireless LAN?	KL1

Long Questions

1	Explain the evolution of wireless communication systems from 1G to 4G, highlighting key technological advancements.	KL1
2	Compare GSM and CDMA in terms of architecture, multiple access method, and applications.	KL2
3	Describe the architecture and working of a Wireless Local Area Network (WLAN).	KL2
4	Discuss the significance of Bluetooth in short-range wireless communication with its protocol stack.	KL4
5	Explain the concept of Wireless in Local Loop (WLL) and its advantages over traditional wired local loops.	KL2
6	What are the main objectives and features of 4G wireless networks? Compare 4G with 3G.	KL2

Unit -2

Short Questions

S. No.	Questions	Bloom Taxonomy
1	Define frequency reuse in cellular systems.	KL1
2	What is a handoff? Differentiate between hard and soft handoff.	KL2
3	Why is spectrum allocation important in cellular networks?	KL2
4	Name two strategies to increase system capacity in cellular networks.	KL4
5	What is co-channel interference and how is it reduced?	KL2
6	Define Grade of Service (GoS) in cellular traffic.	KL2

Long Questions

1	Explain the concept of frequency reuse with a suitable diagram. How does it improve system capacity?	KL1
2	Describe different channel assignment strategies in cellular networks.	KL2
3	Compare MAHO, MCHO, and NCHO handoff strategies with examples.	KL2
4	Explain how cell splitting and sectoring improve coverage and capacity in cellular systems.	KL4
5	Discuss the factors affecting interference in cellular systems and methods to mitigate them.	KL2
6	Derive the system capacity formula for a cellular network. How does frequency reuse factor influence it?	KL2

Unit -3

Short Questions

S. No.	Questions	Bloom Taxonomy
1	Differentiate between FDMA and TDMA.	KL1
2	What is Spread Spectrum Multiple Access? Name its two types.	KL2
3	How does SDMA improve capacity in wireless systems?	KL2
4	Define packet radio and its use in wireless networks.	KL4
5	What is the near-far problem in CDMA systems?	KL2
6	How is capacity calculated in a cellular TDMA system?	KL2

Long Questions

1	Compare FDMA, TDMA, and CDMA in terms of efficiency, complexity, and applications.	KL1
2	Explain Direct Sequence Spread Spectrum (DSSS) and Frequency Hopping Spread Spectrum (FHSS) with diagrams.	KL2
3	Describe Space Division Multiple Access (SDMA) and its implementation using smart antennas.	KL2
4	Discuss the concept of packet radio networks, including ALOHA and slotted ALOHA protocols.	KL4

5	Derive the capacity expression for a CDMA cellular system and explain its parameters.	KL2
6	How do multiple access techniques affect the overall capacity and quality of service in cellular networks?	KL2
Unit -4		
Short Questions		
S. No.	Questions	Bloom Taxonomy
1	How is signaling different in wireless networks compared to fixed telephone networks?	KL1
2	What is Common Channel Signaling (CCS)?	KL2
3	Name two wireless data services.	KL2
4	Define ISDN and its relevance in wireless networks.	KL4
5	What is Advanced Intelligent Network (AIN)?	KL2
6	How does traffic routing in wireless networks differ from fixed networks?	KL2
Long Questions		
S. No.	Questions	Bloom Taxonomy
1	Explain the fixed network transmission hierarchy and its role in wireless networking.	KL1
2	Describe the development of wireless networks from 1G to 4G in the context of network architecture.	KL2
3	Compare wireless and fixed telephone networks in terms of infrastructure, mobility, and signaling.	KL2
4	Discuss Common Channel Signaling (CCS) and its advantages in wireless networks.	KL4
5	Explain the architecture and services of ISDN in supporting integrated voice and data communication.	KL2
6	What is an Advanced Intelligent Network (AIN)? Describe its components and benefits in modern wireless systems.	KL2