

Mobile Computing

Question Bank

PART-A

1. What are the 3 fundamental propagation behaviors depending on their frequency?
2. What is multipath propagation?
3. What is guard space?
4. What are the 3 different basic schemes analog modulation?
5. What is the use of Phase Lock Loop (PLL)?
6. What is hopping sequence?
7. What is dwell time?
8. What are the advantages of cellular systems?
9. What is browsing channel allocation and fixed channel allocation?
10. What are the disadvantages of cellular systems?
11. What is digital spread spectrum multiple access?
12. What is Network and Switching subsystem?
13. What is authentication centre?
14. What is called burst and normal burst?
15. What are the basic groups of logical channels?
16. Define traffic multi frame and control multi frame?
17. What is DVSS?
18. Specify the steps performed during the search for a cell after power on?
19. Explain about transparent mode?
20. What are the basic classes of handovers?
21. When are tuning frequency and frequency considered?
22. How can you utilize mobile antennas efficiently?
23. Compare various modulation techniques.
24. Define the relation between the data rate and bandwidth. What has harmonics to do with bandwidth?

PART-B

1. Discuss briefly the multiplexing techniques.
2. Explain about the signal propagation.
3. Discuss about the cellular system.
4. List the difference between SDMA /TDMA /FDMA/CDMA.
5. What is spread spectrum with its types.
6. Explain about the TDMA.
7. Why CDMA is needed and explain it with an example?
8. Why do MAC scheme in wired network fail in wireless networks and how does the multiple access with collision avoidance (MACA) scheme work?
9. Define modulation and explain the method for analog modulation techniques in details.
10. Discuss briefly the code division multiplexing techniques.
11. Discuss briefly the advanced phase shift keying.
12. a. Explain about cellular wireless network.
b. Explain about wireless transmission.
13. Consider three users and Barker code of six bits each for the users transmitting the signals, introduce noise and near/far problem while transmitting and reconstruct the data in the receiving side providing the proper counter measures for the complications.
14. a. Table the frequency bands used for wireless applications with their ranges, propagation models and applications.
b. Represent diagrammatically the protocol machines for multiple access with collision avoidance.

Part-C

1. Specify the security services offered by GSM.
2. What is the frequency range of uplink and downlink in GSM network?
3. What are the two basic groups of logical channels in GSM?
4. What are the control channel groups in GSM?
5. List out the numbers needed to locate an MS and to address the MS.
6. What are the four possible handover scenarios in GSM?
7. What is meant by GGSN?

8. What is meant by SGSN?
9. What is meant by BSSGP?
10. Define the protocol architecture of DECT.
11. Specify the standards offered by TETRA.
12. How many ITU standardized groups of 3G radio access technologies are there in IMT-2000?
13. What are the steps performed during the search for a cell after power on?
14. What are the two basic classes of handover?
15. What are the two basic transport mechanisms used by DAB?
16. What are the two transport modes defined for MSC?
17. Define the terms:
 - i. Earth Station.
 - ii. Uplink.
18. Define Elevation Angle.
19. What are the factors limiting the number of sub channels provided within the satellite channel?
20. Differentiate Broadcast from Multicast.
21. Detail the features of MSAT.
22. How can an efficient routing be made in satellite systems?
23. What do you understand by co channel interference and adjacent?
24. Describe the services provided by GSM network.

PART-D

1. Explain GSM architecture.
2. Explain Satellite networks in detail.
3. Write short notes on DAB.
4. Write short notes on DVB.
5. Explain DECT.
6. Explain in details the functioning of GPRS.
7. Compare GEO, MEO and LEO.

8. Sketch the data network in your campus. How many hosts are there and how large is the user population? What is the speed of the access link to the Internet? How do you gain access to the Internet? How much does home access to the Internet cost?

9. a. Consider a mobile user who is migrating from a place to another place provide him a seamless service by satellite system, also sketch the architecture.

b. Discuss the importance of DECT Protocol Layers.