

Bhagwan Mahavir College OF Engineering & Technology

DEPARTMENT: COMPUTER Sc. ENGINEERING

SEMESTER : 7th

SUBJECT: 2170710 Wireless Communication and Mobile computing

Chapter 1

- Q. 1** Define channel capacity. Write Shannon and Nyquist capacity formula. State the key factors that affect channel capacity.
- Q.2** Given a channel with an intended capacity of 50 Mbps, the bandwidth of the Channel is 5 MHz. What signal-to-noise ratio is required to achieve this capacity?
- Q.3** Explain Nyquist theorem? Find the relationship among the following terms Channel Capacity (C), Bandwidth (B) and Signal-to-Noise Ratio (SNR).
- Q.4** What is multiplexing? Explain FDM and TDM in details with one example each.
- Q.5** Write advantages and disadvantages of packet switching over circuit switching
- Q.6** What is the circuit switching? Explain the communication phases of circuit switching. Differentiate between Datagram and Virtual circuit operation?
- Q.7** Explain OSI model with function of each layer. List the name of layer which implemented the following Bridge, Gateway, and Repeater.

Chapter 2

- Q.1** Explain GSM architecture and role of its components.
- Q.2** In a CDMA network, assume there are two stations A (chip sequence: 00011011) and E (chip sequence: 00101110). Figure-1 shows two cases of both stations transmitting at the same time. Show the transmitted sequences S1 and S2 and how DSSS does the recovery at receiver.

A E

1 0 A sent 1 and B sent 0

0 - only A sent 0

- Q.3** Define spreading sequence. List different categories of spreading sequences. Explain Walsh code with example.
- Q.4** What is fading? Differentiate
- Fast and slow fading
 - Flat and selective fading.
- Q.5** What is the principle of frequency reuse in context of cellular networks? List the ways of increasing the capacity of a cellular system?
- Q.6** Explain Delta Modulation with their Transmission and Reception block diagram?
- Q.7** What is Direct Sequence Spread Spectrum technology? How does it work in CDMA technology?
- Q.8** What are propagation modes? Explain free Space loss propagation modes in details?
- Q.9** What is the need of ARQ? Explain Automatic Repeat Request (ARQ) in details?
- Q.10** What is handoff and Roaming? Explain the types of handoff in details?

Chapter 3

- Q.1.** Explain operation of Mobile IP
- Q.2** Discuss the network elements in GPRS that are different from GSM. Also discuss applications and limitations of GPRS
- Q.3** Write a note on DECT frame format
- Q.4** Why is UDP needed? Why can't user program directly access IP?
- Q.5** Compare the Following : (i) GSM and GPRS (ii) Wimax and WiFi
- Q.6** Explain functional Architecture of GSM system. And also give different Tele-services provided by GSM.
- Q.7** What kind of changes need in GSM to Convert it into GPRS explain that? Explain application of GPRS?
- Q.8** What are the needs of Mobile IP? Explain handoff operation in Mobile IP.

Chapter 4

- Q.1** Write a note on DECT frame format.
- Q.2** Discuss with suitable diagram distributed coordination function with IEEE 802.11 medium access control logic
- Q.3** List all and explain any five IEEE 802.11 services.
- Q.4** Draw and Explain the IEEE 802.11 Architecture in Details?

Chapter 5

Q.1 Write a note on piconet and scatternet.

Q.2 Draw and explain Bluetooth protocol stack

Q.3 Draw and explain Bluetooth Protocol Architecture?

Chapter 6

Q.1 Define Android layout. Explain various Android layouts

Q.2 Explain Android application framework with their components.

Sign of Faculty

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