

Code :R7420405

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IV B.Tech II Semester(R07) Regular Examinations, April 2011

WIRELESS COMMUNICATIONS & NETWORKS

(Common to Electronics & Communication Engineering, Electronics & Control Engineering
and Electronics & Computer Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) Compare and contrast FDMA, CDMA & TDMA.
(b) A digital system with SNR of 29 DB and bandwidth of 30 KHZ is used for wireless applications. Estimate the possible data rate and comment if it can support USDC/GSM systems.
2. (a) Write notes on PSTN.
(b) Present the hierarchy of X.25 in OSI model and explain.
3. (a) Draw the block diagram of CDPD and explain.
(b) Present the network services port of SS7.
4. (a) Describe the operation of mobile IP.
(b) Write notes on registration process in mobile IP.
5. (a) Explain the requirements of wireless LANs.
(b) Describe the IEEE 802.11 Architecture and services.
6. (a) Explain Bluetooth protocol stack.
(b) Explain the Bluetooth baseband formats.
7. (a) Draw the wireless application protocol (WAP) layered protocol architecture and explain.
(b) Discuss about location management in GPRS.
8. Write detailed notes on wireless ATM.

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1. (a) Explain SDMA with necessary relations and diagrams.
(b) Derive an expression for the number of mobile users in a single cell CDMA system employing a voice activity factor of α and a three-sector antenna.
2. (a) Describe packet switching describing the fields in a typical packet of data.
(b) Discuss the limitations in wireless networking.
3. (a) Draw the block diagram ISDN and explain.
(b) Write notes on common channel signaling.
4. (a) Write notes on discovery with reference to mobile IP.
(b) Describe the fields mobile IP agent advertisement message.
5. (a) Describe the transmission techniques in IR LANS.
(b) Write notes on IEEE 802.11 Services.
6. (a) Explain different Bluetooth usage models.
(b) Explain the Bluetooth state transition diagram and explain various states & substates.
7. (a) Discuss the power control and security issues in GPRS.
(b) How does GPRS provide a variety of data services.
8. (a) Explain the adhoc network architecture in the HIPERLAN 1.
(b) Discuss the security issues in wireless ATM.

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1. (a) Discuss different schemes to enhance capacity of a CDMA system.
(b) Explain packet radio access scheme.
2. (a) Describe first generation mobile networks elaborating communication signaling.
(b) Write notes on circuit switching.
3. (a) Write notes on RAM mobile data.
(b) Explain about SS7 user part of signaling.
4. (a) Write notes on tunneling with reference to mobile IP.
(b) List and briefly define the capabilities provided by mobile IP.
5. Describe IEEE 802 architecture and services.
6. (a) Explain Bluetooth ARQ scheme.
(b) Write notes on L2CAP channels.
7. Draw the protocol state for GPRS and discuss it.
8. (a) Explain the similarities between HIPERLAN1 and HIPERAN2.
(b) Write notes on adhoc networking.

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1. (a) Explain CDMA and explain how near-far effect in CDMA is eliminated.
(b) Explain non-persistent CSMA and 1-persistent CSMA.
2. Discuss in detail the differences between wireless and fixed telephone networks.
3. (a) Write notes on ARDIS
(b) Describe the cell format of ATM.
(c) Write notes on signaling traffic in SS7.
4. (a) Write notes on mobile IP encapsulation.
(b) Distinguish a mobile and a nomadic user
(c) What is the relationship between mobile IP discovery and ICMP.
5. (a) Write notes on narrowband microwave LANS.
(b) Write notes on IEEE 802.11 physical layer.
6. (a) Write notes on link manager specification.
(b) Explain the purposes served by frequency hopping in Bluetooth.
7. (a) Write notes on Data oriented CDPD network.
(b) Explain mobile application protocol.
8. (a) Explain the adhoc network architecture in HIPERLAN1.
(b) Draw the typical packet frame format for wireless ATM? Explain each field of it.
