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Chapter 1 ① From 1908 communication has been used as telecommunication. Marconi found wireless in 1896 & 1898 SCORE flight in the sky. GSM was born in 1988 First WLAN was published in 1997. ② 2G cellular systems provide roaming and ③ mobile IP ④ Wi-Fi ⑤ WiMAX ⑥ Self-Organizing Network ⑦ Wireless Personal Area Network ⑧ Sensor network ⑨ Internet of things ⑩ Today wired network.

Chapter 2 ① World - carry different forms of electrical signals from one end to another. Wireless - radio frequency mainly as mentioned above. ② Unlicensed wireless devices on the Smart grid operate in one of the bands set aside by the FCC for industrial, Scientific or medical (ISM) applications. ③ Spherical omnidirectional ④ ① wave in the media ⑤ interface when the electromagnetic waves bounce back to spread ⑥ ② When the wave encounters an obstacle - it changes from one material type to that in the form of penetration, wave may change its linear trajectory. ⑦ Indoor to and infrastructure to each other and another to communicate with each other or world. ⑧ The distance is determined by the expression where n is called the path loss exponent. The wireless radio channel puts fundamental limitations to the performance of wireless communication systems. ⑨ ① - Multipath ② The Shadow effect Caused by the obstruction of the instruments, the received signal strength decreased but the field strength with the geographical change slowly change. ③ The mobile business - dynamic ④ free space ⑤ building penetration - 20dB, 40dB ⑥ 2.4 GHz Shadowed by the building: 4-6 ⑦ large-scale fading due to path loss of signal as a function of distance and shadowing by large objects such as buildings and hills Small-scale fading due to the constructive and destructive interference of the multiple signal paths between transmitter and receiver ⑧ Rician ⑨ distributions. ⑩ $P_r = \frac{P_t}{r^n}$ ⑪ $\frac{P_t}{r^3}$ ⑫ $I_{max} = \frac{1}{r^n} P_{ref}(r_{min})^n$ ⑬ $\frac{P_{ref}}{r^n}$ (r>r_min) ⑭ see 2.8 Chapter 4

Chapter 3 ① TDMA ② CDMA ③ The technique of sectorizing a single high power transmitter of several low power transmitters to replace others ④ two or more base stations that are located in relatively proximity to each other. ⑤ It's divided into cells known as the principle of frequency reuse ⑥ HLR in cellular is the reference database for subscriber parameters. ⑦ It contains a copy of most of the data stored on the HLR ⑧ approximately 3 faster and more efficient ⑨ GSM to CDMA ⑩ The inter-SCAN roaming procedure is the most complicated roaming procedure. MS Changes from an SCDN node to another. ⑪ CDMA 2000, WCDMA-TD-SCDMA. ⑫ CDMA Technology ⑬ TDD is combined with the OFDM MIMO technology is called EDGE. ⑭ Channel-aware Scheme is based on a multiplexing method used about separate data streams or signals to share the same communication channel or physical medium. ⑮ 3G Cellular networks promises a uniform architecture for all 3G wireless networks around the paper propose a flexible hierarchical resource management mechanism.

Chapter 5

Mobile computer Cloud, Mobile Internet, Mobile Web Initiative.

Chapter 6

① Is developed to overcome the limitations of pre-existing microkernels

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Surgical procedures and to enhance the capabilities of Surgeons performing open surgery. ② Two types of handoff, namely mobile-initiated handoff and Mobile-switch handoff. Three Mobile base Stations are connected to the same switch, Mobile when mobile user moves from one base station to another. ③ NMOS: network makes the decisions used in 2G. Now & both. ④ MSE: the mobile decides for itself. used in 3G. ⑤ Packet and mobile IP. ⑥ NAMOS: the mobile provides data for the network to make the decision - used in GSM & 3G. ⑦ CDMA. ⑧ Hard handoff: Simultaneously at one moment in time one cell was only one channel. The phone. Continuously always used to be capable of receiving two or more channels in order to switch between them. Half the Cell way of temporarily dropped. ⑨ Soft handoff ⑩ advantage: The connection to the present cell is broken only after a reliable connection to the target cell has been established. ⑪ disadvantage: Testing and interference in different channels are monitored. ⑫ Using the dispersion of light and Size of mesh in which it occurs on between the wires. ⑬ Fluid flow is a mathematical model used to describe the flow level in a compressible subject to constantly accelerated periods of Turbulent and swirling. ⑭ Area where a mobile device moves within a Static cell and which forms other cell within an Option. ⑮ ⑯ When a mobile Sig. of becomes weak and can't find other cell within an Option. ⑰ Service calling: cellular network search for the available access location for called user. If answered, caller will send a Password ⑱ to prevent the Password Retry for entering the correct password. ⑲ Reference Point to Calculate the order of priority according to their reference. Chapter 7 ① We have an Internet Address to stay fixed with the same number all the time. ② People know how to access their server. ③ To assume the mobility is able to respond to packets for any domain name using MA per can. ④ Mobile IP packet routing of IP datagrams to mobile nodes. The mobile nodes home address identifies all nodes, regardless of its current point of attachment to the Internet. ⑤ Foreign Registration using a fixed time found based upon my type, each one was received a Signal from the neighbor. ⑥ It's not possible to Communicate Simultaneous to the various type of address in the reverse advertisement, as in the case with datagram routing. ⑦ To secure the registration request each request must contain unique close to their different registrations and in practice terms never. And the same host. ⑧ Mobile decapsulate these registrations registration problem and many lead to an appropriate behavior. even in case of not sufficient to secure voice.

Chapter 8 ① PCF: fundamental MAC Technique of the 802.11 and called DCF and PCF. ② MAC Technique based on WLANs used a 2323 bytes. ③ ④ acronym for CSMA/CA. Interframe Space (IFS) stands for the Shortest Interframe Spacing. ⑤ ⑥ one of the Interframe Space used in 802.11 and a small value. ⑦ ⑧ The RTS/CTS Frames was introduced is mainly used to minimize the amount of time spent when a collision occurs. Such collision occurs in these two examples. ⑨ 802.11e an approved amendment to the 1999 base standard that defines a set of quality of service (QoS) ⑩ ⑪ Ad-hoc network allow each device to communicate directly with each other. An infrastructure mode network requires the use of an Access Point which controls wireless communication and offers several advantages

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① Infrastructure mode - base station connects mobile into wired network handoff: mobile changes base stations providing connection into wired network. ② Ad hoc mode: Less structured mode: only connect to other nodes within link coverage nodes organize themselves into a network: route among themselves. ③ 802.11 is a type of data link and physical Layer protocols responsible for network-wide data transfer. ④ The digital link protocol (DLC) Open Communication protocol layer is the upper portion of the data link layer (as in 2) of the Seven-layer OSI model. ⑤ ⑥ Light is electromagnetic radiation with a wavelength within the visible spectrum or visible light. measured from the violet edge of visible red light. Radio is the transmission of signals through free space by modulation of electromagnetic waves with frequencies within range of visible light. ⑦ 802.11 — Wireless and 2 Mbit/s maximum bandwidth using infrared or 2 GHz between 2 GHz and 3 GHz. ⑧ 802.11b - operates in both 2.4GHz and 5GHz range. ⑨ 802.11g - operates in 2.4GHz. ⑩ 802.11b - operates in both 2.4GHz and 5GHz range. ⑪ 802.11g - operates in 2.4GHz. ⑫ HIPERLAN/1 offers 23.5Mbps throughput for data packets ready to be sent. After one node has sent, every other node can compete for the right to send. ⑬ The 2.4 GHz Distributed Coordination Function (DCF) Point Coordination Function (PCF). The hybrid coordination function (HCF) ⑭ To coordinate networking wireless ⑮ a group communication where information is addressed to a group of destination computers simultaneously. ⑯ The NIM may be thought of as a counter which counts down to zero at a uniform rate. ⑰ The 802.11 MAC defines another coordinating function called the point coordination function. This is available only in Infrastructure mode, where stations are connected to the network through an AP. ⑱ Synchronization function keeps the timers for all stations in the same BSS synchronized. ⑲ All stations periodically in local time. Timing conveyed by periodic Beacon transmissions. ⑳ Time divided into beacon intervals each containing a beacon generation window, Beacons transmitted start in order. ㉑ The interframe Space called DIFS is proposed for time synchronization. ㉒ 802.11 based wireless local area network. ㉓ CyberPASS used to access the channel. ㉔ Transmitted in ATIM - window by stations who want to send buffered packets. ㉕ IP fragmentation is an IP process that breaks datagrams into smaller pieces (called packets) may be formed that an packet is.

Chapter 9 GMLMAX offers high speed connection to your Internet. It has 6th generation of low cost technology. ① It receives MAC's data via IP. It has many physical types. WMAN-SC, WMAN-SCa, WMAN-OFDM, WMAN-OFDMA. ② ETSI made by High Speed Data Signal Packet to low speed data which may be easier for us to accomplish the Broad Single in the many functions.

Chapter 10 ① The is Unidirectional operation. It has only one carrier after the spacing. Ambrider is Self-organized Network which doesn't need center core. ② Node: N, N1, N2, ... Be, Br, N1Br, N2Br, N3Br, Node, data, and transfer data ③ 1123 ETSI MAC Ultimates only one Stages for Users in Workbridge the space say to describe a routine to Calculate the function. Upper and lower bound of inventory network with the connection ④ Hidden terminals and exposed terminals will cause resources waste. In ad hoc, when transmit data appears, the hidden terminal will do the same things as the one who caused the wast of resources.

Chapter 11 ① Pole working station to Took working Signal. After AP receiving it

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Returns a Signal. If it's successful, then ask the station to read the next.

① 2222 3G1X working is a Standard principle to what the part with Internet using. It need identify itself and it ordered the user to allocate the resources. ② 1G2P single dedicated people lead to poor AP. WAP2: add an inter structure is nearly low latency. Data Burst: throughout the capacity of Controlling and Sharing channel is ① It need low latency to enable it and it costs less than before. It Strengthen the connection between two computers in the distance & longer. ③ It mainly has increasing of stores, Standby and connection. And then it has separated into two parts: Packet Zone Switching Zone. ④ 2222 The electronic Flag, 2222 Tag Reader, it send and frequency energy to Tag. ⑤ Give energy to read. Tag to Reader's charge transfer. And the safety of data encryption. to view other computer. ⑥ 2222 Electronic Car ID. ETC system Chapter 12 ① People can manage the WSN with the inexpensive radio/optical controlling wireless and extension of the monitored data ② via receiving. ③ the power normally affects the available power needed for the system. ④ Signal scanning system for transmission loses bandwidth and monitoring and Early warning system for collisions. Smart electricity expression causes WSN. One key for improving the energy efficient performance of Smart building. ⑤ The cluster network which are organized into a connected network according to a certain topology. ⑥ The communication distance of nodes in the network is generally short. ⑦ When transmission rate decrease, receiving the delivery reliability will be higher and network lifetime will be longer. ⑧ Sensing energy consuming from sources are used to power sensor sensors. Chapter 13 ① Software defined Radio. Whenever how energy Cognitive radio. ② High processing gain - high transfer rate. Accurate positioning, low cost and accuracy ③ Bluetooth low energy is based on bluetooth, at the same time Simplicity the bluetooth in its deep design, the use of 3 days to achieve Bluetooth Bluetooth chip is a low power Bluetooth protocol stack and integrated into the master controller. ④ It use the information in "databases and" AP environment. channel competition, link performance. ⑤ Short distance, high speed, low charge personalize personal multimedia entertainment. Wireless system Navigation positioning. Chapter 14 ① OSPF is an each route grouping to be dynamic, manageable, cost-effective and adaptable to seeking to be suitable for the high-level network. ② Openflow is the key technology to accomplish the VXLAN is virtual LAN Exchange connecting key system. ③ Cisco, Ericsson, IBM, Microsoft, Brocade, Vmware, Juniper, Big Switch Company, Barefoot. ④ ⑤ ⑥ ⑦ From the freedom from traditional foundations to also support the function of logical structure. Chapter 15 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿ (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100) (101) (102) (103) (104) (105) (106) (107) (108) (109) (110) (111) (112) (113) (114) (115) (116) (117) (118) (119) (120) (121) (122) (123) (124) (125) (126) (127) (128) (129) (130) (131) (132) (133) (134) (135) (136) (137) (138) (139) (140) (141) (142) (143) (144) (145) (146) (147) (148) (149) (150) (151) (152) (153) (154) (155) (156) (157) (158) (159) (160) (161) (162) (163) (164) (165) (166) (167) (168) (169) (170) (171) (172) (173) (174) (175) (176) (177) (178) (179) (180) (181) (182) (183) (184) (185) (186) (187) (188) (189) (190) (191) (192) (193) (194) (195) (196) (197) (198) (199) (200) (201) (202) (203) (204) (205) (206) 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