CS 898T Mobile and Wireless Networks Quiz 4 - Name: _____
Spring 2004

(50 points - 2 points for each problem)

(D) 1. The PDA falls into the category of:
(A) fixed and wired (B) mobile and wired (C) fixed and wireless (D) mobile and wireless

(D) 2. What frequency allocations do wireless LAN use?
(A) 500 - 900 MHz (B) 1000 MHz - 2000 MHz (C) 1800 MHz - 2200 MHz (D) 2400 MHz - 2500 MHz

(B) 3. The wavelength of 300 MHz frequency is
(A) 1 cm (B) 100 cm (C) 10 m (D) 1 km

(C) 4. The frequency of 30 cm wavelength is
(A) 10 MHz (B) 100 MHz (C) 1 GHz (D) 10 GHz

(A) 5. DECT is a standard for
(A) cordless phone (B) trunked radio (C) mobile phone (D) LAN

(A) 6. The antenna size for GSM 1800 is
(A) 4 cm (B) 8 cm (C) 10 cm (D) 18 cm

(B) 7. Which wave can travel around the world?
(A) ground wave (B) sky wave (C) line-of-sight (D) none of the above

(C) 8. Which wave is preferred for mobile phone systems?
(A) ground wave (B) sky wave (C) line-of-sight (D) none of the above

(D) 9. Radio waves will be deflected at an edge and propagate in different directions. This effect is
(A) refraction (B) blocking (C) reflection (D) diffraction

(A) 10. Digital data is translated into an analog signal. This is called
(A) digital modulation (B) analog modulation (C) phase modulation (D) binary modulation

(C) 11. Which is not the reason why a baseband signal cannot be directly transmitted in a wireless system:
(A) attennas (B) FDM (C) TDM (D) medium characteristics

(B) 12. Which is a frequency shift keying scheme?
(A) BPSK (B) GMSK (C) QAM (D) none of the above

(C) 13. A medium can carry 8 Kbaud. Which scheme can achieve the 48 Kbps transfer rate?
(A) QPSK (B) QAM-16 (C) QAM-64 (D) QAM-128

(D) 14. Which does not use MCM?
(A) IEEE 802.11g (B) DAB (C) HiperLAN (D) none of the above

(B) 15. Which is not the disadvantage of cellular systems?
(A) infrastructure needed (B) local interference (C) frequency planning (D) none of the above

(D) 16. Which statement about cellular systems using CDM is true?
(A) It needs elaborate channel allocation schemes. (B) It needs complex frequency planning.
(C) The cell size is fixed. (D) none of the above

(A) 17. Which media access method is used in wireless LAN?
(A) CSMA/CA (B) CDMA/CD (C) CDMA/CA (D) CSMA/CD

(B) 18. Which can achieve best channel utilization in high load?
(A) slotted ALOHA (B) 0.01-persistent CSMA (C) 1-persistent CSMA (D) nonpersistent CSMA

(D) 19. Which needs most complicated power control for senders?
(A) SDMA (B) TDMA (C) FDMA (D) CDMA

(C) 20. Which scheme is a combination of CDMA and TDMA?
(A) DAMA (B) PRMA (C) SAMA (D) none of the above

(A) 21. Which is not used in GSM?
(A) CDMA (B) FDMA (C) TDMA (D) SDMA

(C) 22. Which is a reservation mechanism?
(A) SAMA (B) OFDM (C) DAMA (D) none of the above

(B) 23. Which is a good code for CDMA?
(A) (0, 0, 0, 0) (B) (1, -1, 1, -1) (C) (1, 1, 1, 1) (D) none of the above

(A) 24. Consider a sender A wants to send the data bit 0 with key = 010100. Assume we code a binary 0 as -1, a binary 1 as +1. What will be sent?
(A) (+1, -1, +1, -1, +1, +1) (B) (-1, +1, -1, -1, +1, +1)
(C) (-1, +1, +1, +1, +1, +1) (D) (-1, +1, -1, +1, -1, -1)

(B) 25. Continue the above question. If a noise (0, -2, +2, 0, -2, 0) is added to the transmitted signal, what data bit can the receiver detect for sender A?
(A) -1 (B) 0 (C) +1 (D) undefined