BABA BANDA SINGH BAHADUR ENGG COLLEGE
Department of Electronics & Communication
Mobile Computing Question Bank

1. What are types of Handover?
2. What are the reasons for delays in GSM for packet data traffic?
3. If 8 speech channels are supported on a single radio channel, and if no guard band is assumed, what is the number of simultaneous users that can be accommodated in GSM?
4. What is meant by beacon?
5. List out the numbers needed to locate an MS and to address the MS.
6. What are the Design Goals of Wireless LAN?
7. Mention some of the disadvantages of WLANS?
8. Mention the features of radio transmission?
9. What are the disadvantages of radio transmission?
10. Mention the features of infrared transmission?
11. What are Advantages and Disadvantages of Infrared?
12. What is the difference between infrastructure and ad-hoc networks?
13. Define frequency hopping spread spectrum?
14. Define random back off time?
15. What is the primary goal of IEEE 802.11?
16. Is IEEE 802.11 and Wi-Fi same/ State the purpose of Wi-Fi.
17. Why the PHY layer of IEEE 802.11 is subdivided? What about HiperLAN2 and Bluetooth?
18. What are the various versions of a physical layer defined in IEEE 802.11 standards?
19. What are the system integration functions of MAC management?
20. What are the requirements of mobile IP?
21. Mention the different entities in a mobile IP.
22. Define Mobile node:
23. Explain Cellular IP.
24. What do you mean by mobility binding?
25. Define COA.
26. Define a tunnel.
27. What is encapsulation?

28. What is decapsulation?
29. Define an outer header.
30. Define an inner header.
31. What is meant by generic routing encapsulation?
32. Why is need of routing?
33. What is the use of network address translation?
34. Define triangular routing.
35. What is meant by a binding cache?
36. Define binding request.
37. What is known as Binding update?
38. Explain binding acknowledgement.
39. Define binding warning.
40. What are the advantages of cellular IP?
41. What is known as mobility anchor point?
42. Explain destination sequence distance vector routing.
43. What are the two things added to the distance vector algorithm?
44. How the dynamic source routing does divide the task of routing into two separate problems?
45. How can DHCP be used for mobility and support of mobile IP?
46. List out the some of the popular Routing protocols.
47. What is meant by Transparency?
48. Specify the field of minimal encapsulation.
49. UHF 900 MHz frequency band is commonly used in cellular mobile communications mainly due to

    (a) regulations and standards.

    (b) non-availability of band below 900 MHz.

    (c) line-of-sight propagation available in operating area.

    (d) line-of-sight and reflected signals ensure the reception at mobile.

50. GSM cellular mobile communication service uses

    (a) FDMA for multiple users.

(b) FDMA for multiple channel access and TDMA for multiple users.

(c) TDMA for multiple channel access.

(d) different uplink and downlink modulation methods.

51 WLAN services uses

(a) short distance communications at high data rate.

(b) short distance communications at low data rate.

(c) long distance communications at high data rate.

(d) long distance communications at low data rate.

52 IEEE 802.11g WLAN devices can be as far as 100 meters apart and can send and receive data at rates up to_____Mbps.

(a) 75

(b) 54

(c) 11

(d) 1

53 Bluetooth devices provide

(a) short distance (1-100 meters) communications up to 1 Mbps data rate.

(b) short distance (1-100 meters) communications up to 1 Gbps data rate.

(c) short distance (1-100 meters) communications up to 2 Gbps data rate.

(d) short as well as long distance (1m - 1km) communications up to 1 Mbps.

54 Bluetooth devices communicate using small radio transceivers called_____that

are built onto microprocessor chips.

(a) transponders

(b) radio modules

(c) receivers

(d) transmitters

55 Ultra Wide Band technology is used primarily for

(a) connecting wireless devices inside the home at very high speeds.

(b) displaying Web pages on a cellular phone.

(c) transmitting data at distances of up to 56 kilometers.

(d) finding the location of a vehicle within a small city.

56 Security issues in a wireless device are encountered due to

(a) virus attacks and hacking of data.

(b) virus attacks, hacking of data, and eavesdropping.

(c) jamming of the received signals.

(d) virus attacks, hacking, eavesdropping, jamming, and forcefully exhausting the energy resources.

57 A wireless security mechanism should provide

(a) secure access of a mobile device to the service provider.

(b) authentication, integrity, and privacy of services.

(c) integrity and wired-equivalent privacy of services.

(d) authentication, integrity, and confidentiality of services.

58 GPRS is a

(a) circuit-switched-cum-packet-oriented service for mobile users.

(b) packet-oriented service for mobile users.

(c) asynchronous packet-oriented service for mobile users.

(d) synchronous packet-oriented service for mobile users.

59. The wireless medium

(a) is quite reliable for voice and data communication

(b) is not quite reliable for voice and data communication

(c) offers very large bandwidth

(d) does not support mobility

60 It is difficult to achieve accurate timing, synchronization and phase recovery at the mobile receiver. It is attributed mainly to the effect of

(a) Doppler spread of the received signal

(b) multipath propagation reception

(c) scattering of the transmitted signal

(d) non line-of-sight propagation

61 The propagation path loss

(a) increases with frequency of transmission but decreases with the distance

(b) decreases with frequency of transmission as well as the distance

(c) increases with frequency of transmission as well as the distance

(d) is always constant, independent of frequency of transmission and distance

62 The difference in free-space propagation path loss between two locations at 2 Km and 8 Km from the transmitter is

(a) 6 dB

(b) 12 dB

(c) 20 dB

(d) 40 dB

63 In mobile radio propagation environment, typical value of path loss exponent, γ is

(a) 2

(b) 3

(c) 4

(d) 5

64 _____ occurs when the radio path between transmitter and receiver is obstructed by surface with sharp irregular edges.

(a) Scattering
(b) Refraction

(c) Reflection

(d) Diffraction

65 Two main reasons that contribute to the rapid fluctuations of the signal amplitude in mobile communications are

(a) Multipath fading and Doppler effect

(b) Reflection and Refraction

(c) Diffraction and Scattering

(d) Blocking and Shadowing

66 In a digital communication system, the delay spread alongwith fading causes _____, thereby limiting the maximum symbol data rate.

(a) intersymbol interference

(b) multipath fading

(c) Doppler effect

(d) high bit error rates

67 The average delay spread is typically about_____in an urban area.

(a) <0.1 μs

(b) 0.5 μs

(c) 3 μs

(d) 10 μs

68 Doppler frequency or Doppler shift is given by

(a) $\lambda_c V_m \cos\theta$

(b) $(1/\lambda_c) V_m \cos\theta$

(c) $[1/(\lambda_c V_m)] \cos\theta$

(d) $(1/ V_m) \lambda_c \cos\theta$

where λ_c is the wavelength of the carrier signal, V_m is the relative velocity of the mobile, the angle θ is between the motion of the mobile and direction of arrival of the scattered waves.

69 A base station transmitter operates at 900 MHz carrier frequency. For a mobile moving at a speed of 72 Km/h in a direction perpendicular to the direction of arrival of the transmitted signal, the received carrier frequency is

(a) 899.99994MHz

(b) 900.00006 MHz

(c) 900.00003 MHz

(d) 900 MHz

70 A_____is the one which passes all spectral components with approximately equal gain and linear phase and without any distortion.

(a) Rayleigh fading channel

(b) Rician fading channel

(c) frequency-selective channel

(d) flat channel

71 If the bandwidth of transmitted signal is larger than the channel coherence bandwidth, then the signal could be severely influenced by

(a) frequency-selective fading

(b) flat fading

(c) fast fading

(d) slow fading

72 ____channels are useful models of real-world phenomena in wireless communications.

(a) Rayleigh and Rician fading

(b) Frequency-selective fading

(c) AWGN

(d) Fast fading

73 As the E_b/N_o ratio increases, the bit error rate_____.

(a) increases

(b) decreases

(c) remains same

(d) approaches infinity

74 _refers to the phenomenon by which multiple copies of a transmitted signal are received at the receiver, due to the presence of multiple radio paths.

(a) Rayleigh fading

(b) Rician fading

(c) Multipath

(d) Reflection

75 ___results from the presence of objects between the transmitter and the receiver.

(a) Scattering

(b) Refraction

(c) Shadow fading

(d) Doppler effect
