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Grade **98.00** out of 120.00 (82%)

Question 1

Complete

Mark 1.00 out of 1.00

Which of the following statement is incorrect?

- a. In soft handoff, a new connection is established before the old one is released.
- b. In hard handoff, the existing connection with the Base Station (BS) must be broken before establishing a connection with a new BS.
- c. In soft handoff, the existing connection with the Base Station (BS) must be broken before establishing a connection with a new BS.
- d. In hard handoff, the mobile unit simultaneously remain connected to more than one Base Station (BS).

Question 2

Complete

Mark 1.00 out of 1.00

Determine the distance between nearest co-channel cells of a cellular system for $i = 1, j = 2$ and cell radius 2 m

- a. 7.75
- b. 10.00
- c. 4.59
- d. 9.16



Question 3

Complete

Mark 1.00 out of
1.00

Which multiple access technology is used in LTE?

- a. FDMA
- b. OFDMA
- c. TDMA
- d. CDMA

Question 4

Complete

Mark 1.00 out of
1.00

A network of five mobile phones for data sharing is created using Bluetooth, what is the operating frequency of this network

- a. 24 GHz
- b. 5 GHz
- c. 2.48 GHz
- d. 240 MHz

Question 5

Complete

Mark 1.00 out of
1.00

What is the purpose of the Base Station Controller (BSC) in GSM?

- a. Providing Internet connectivity
- b. Managing handovers between cells
- c. Processing billing information
- d. Encoding voice signals

Question 6

Complete

Mark 1.00 out of
1.00

Which of the following is not a types of Spoofing?

- a. Website Spoofing
- b. IP Spoofing
- c. Hit and Run DDOS
- d. Email Spoofing

Question 7

Complete

Mark 1.00 out of
1.00

The Radio Frequency Identifier tag needs Line of Sight (LoS) communication to be scanned by the Radio Frequency Identifier reader?

- a. True
- b. False



Question 8

Complete

Mark 1.00 out of
1.00

The 5G technology uses

- a. None of these
- b. Millimeter wave
- c. Microwave
- d. Infrared wave

Question 9

Complete

Mark 1.00 out of
1.00

The major constraint in a mobile sensor network (MSN) _____

- a. Mobility Management
- b. Bandwidth Management
- c. Power Management
- d. Heterogeneity

Question 10

Complete

Mark 1.00 out of
1.00

Which of the statement is wrong among the following

- a. HSPA allows networks based UMTS (Universal Mobile Telecommunication Systems) to acquire higher data speed.
- b. HSPA (High Speed Packet Access) is known as 3.5G.
- c. None of these
- d. HSPA+ (Evolved High Speed Packet Access) is known as 4G.

Question 11

Complete

Mark 1.00 out of
1.00

Which entity in a GSM network is responsible for coordinating channel borrowing between cells?

- a. Visitor Location Register (VLR)
- b. Mobile Switching Center (MSC)
- c. Base Transceiver Station (BTS)
- d. Home Location Register (HLR)



Question 12

Complete

Mark 1.00 out of
1.00

A network of five mobile phones for data sharing is created using Bluetooth, what is the operating frequency of this network

- a. 200 MHz
- b. 5 GHz
- c. 2.4 GHz
- d. None of these

Question 13

Complete

Mark 1.00 out of
1.00

Which among them has the strongest wireless security?

- a. WPA (Wi-Fi Protected Access)
- b. WPA3 (Wi-Fi Protected Access 3)
- c. WPA2 (Wi-Fi Protected Access 2)
- d. WEP (Wireless Equivalent Privacy)

Question 14

Complete

Mark 1.00 out of
1.00

In an AMPS cellular system, is allocated with 12.5 MHz for each simplex channel, the guard band at the two edges of the allocated band is 6 KHz, and the channel spacing for each user is 25 KHz. Find the total number of channels available in the FDMA system and the total numbers of users can be supported by the system.

- a. 500 channels, 250 users
- b. 250 channels, 250 users
- c. 500 channels, 500 users
- d. 250 channels, 500 users

Question 15

Complete

Mark 1.00 out of
1.00

An Radio Frequency Identifier (RFID) reader, consists of how many components?

- a. Two
- b. Three
- c. One
- d. Four



Question 16

Complete

Mark 1.00 out of 1.00

Which of the following statement is incorrect

- a. In OFDM (Orthogonal Frequency Division Multiplexing), the ICI (Inter-carrier-Interference) and ISI (Inter-Symbol-Interference) problem is less.
- b. OFDM (Orthogonal Frequency Division Multiplexing) provides a high spectral efficiency and data rate.
- c. In OFDM (Orthogonal Frequency Division Multiplexing), the PARP (Peak to average power ratio) is less.
- d. None of these

Question 17

Complete

Mark 1.00 out of 1.00

Optical communication needs line of sight for communication between transmitter and receiver.

- a. True
- b. False

Question 18

Complete

Mark 1.00 out of 1.00

In OFDM (Orthogonal Frequency Division Multiplexing), a set of different subcarriers overlapping in frequency domain. However, these subcarriers are

- a. designed to be in $\pm 90^0$ phase shift with each other
- b. designed to be in $\pm 135^0$ phase shift with each other.
- c. designed to be in $\pm 180^0$ phase shift with each other.
- d. None of these

Question 19

Complete

Mark 0.00 out of 1.00

What causes high PAPR in OFDM systems?

- a. Channel equalization errors
- b. Out-of-phase alignment of subcarriers
- c. Multipath interference
- d. Phase noise in the carrier signal



Question 20

Complete

Mark 1.00 out of
1.00

A base station (BS) is transmitting with a power of 25 watt at frequency $f_c = 900 \text{ MHz}$, the distance between the BS and the receiver mobile unit is 50 m. Calculate the power received in dBm by the mobile unit considering free space propagation, where both the transmitting and receiving antenna has unit gain.

- a. -21.53 dBm
- b. 69.49 dBm
- c. 21.53 dBm
- d. None of these

Question 21

Complete

Mark 1.00 out of
1.00

Which feature of GPRS enables more efficient use of network resources compared to traditional GSM?

- a. Circuit-switched data transmission
- b. Dedicated communication paths for data transfer
- c. Voice call prioritization
- d. Always-on connectivity

Question 22

Complete

Mark 0.00 out of
1.00

In an IP Spoofing attack, what does the attacker do?

- a. Floods the target server with a large number of ICMP packets
- b. Exploits vulnerabilities in the network infrastructure to gain unauthorized access
- c. Redirects legitimate traffic to a malicious destination
- d. Forges the source IP address in packets to impersonate a trusted entity

Question 23

Complete

Mark 1.00 out of
1.00

Which of the statement is incorrect among the following

- a. None of these
- b. UMTS networks has a circuit switched element.
- c. UMTS networks has both circuit and packet switched element.
- d. UMTS networks has a circuit switched element.



Question 24

Complete

Mark 0.00 out of
1.00

How does the borrowing strategy contribute to the efficiency of channel allocation in GSM networks?

- a. By minimizing the occurrence of dropped calls
- b. By redistributing unused channels to cells with high traffic demand
- c. By reducing the need for handovers
- d. By dynamically adjusting channel frequencies based on traffic patterns

Question 25

Complete

Mark 0.00 out of
1.00

How does cell sectoring contribute to the reduction of interference in cellular networks?

- a. By decreasing the number of available frequency bands
- b. By increasing the transmit power of base stations
- c. By implementing directional antennas to focus signals within specific sectors
- d. By limiting the coverage area of each base station

Question 26

Complete

Mark 1.00 out of
1.00

The interface between the UTRAN (UMTS Terrestrial Radio Access Network) and the CN (Core Network) is

- a. Iur interface
- b. None of these
- c. Iu interface
- d. Iub interface

Question 27

Complete

Mark 0.00 out of
1.00

How does LEACH handle the issue of node failures or depletion of energy in cluster heads?

- a. By increasing the data redundancy in the network
- b. By dynamically adjusting the transmission power of neighboring nodes
- c. By redistributing the cluster head role to other eligible nodes
- d. By reducing the data rate of wireless transmissions



Question 28

Complete

Mark 1.00 out of
1.00

Determine the capacity of a cellular system, with cluster size $i = 1, j = 1$ where each cell is allocated a group of 60 channels and replication factor $M = 6$.

 a. 720 b. None of these c. 1680 d. 1080**Question 29**

Complete

Mark 1.00 out of
1.00

The barcodes needs Line of Sight (LoS) communication to be scanned by the barcode reader?

 a. True b. False**Question 30**

Complete

Mark 1.00 out of
1.00

If the distance between co-channel cells are D and the cell radius is R , then the co-channel reuse ratio is given by

 a. D^2/R b. D/R^2 c. $D*R$ d. D/R **Question 31**

Complete

Mark 1.00 out of
1.00

Among the three basic modulation schemes which yields the minimum probability of error.

 a. BASK (Binary Amplitude Shift Keying) b. BFSK (Binary Frequency Shift Keying) c. All of these have the same probability of error d. BPSK (Binary Phase Shift Keying)

Question 32

Complete

Mark 1.00 out of
1.00

Wireless networks are same as computer networks, that uses radio frequency channels as their _____ for communication.

- a. Physical media
- b. Media access control
- c. CDMA
- d. TDMA

Question 33

Complete

Mark 1.00 out of
1.00

What is the typical communication technique between cluster heads and the base station in LEACH?

- a. Time division multiple access (TDMA)
- b. Code division multiple access (CDMA)
- c. Spatial division multiple access (SDMA)
- d. Frequency division multiple access (FDMA)

Question 34

Complete

Mark 0.00 out of
1.00

In MACA protocol, a neighboring node near the sender which receives RTS (request to send) packet

- a. will not transmits till it receives the data packet
- b. will transmit RTS-CTS packets as per the requirements
- c. will delay the transmission it receives the CTS packet
- d. will delay the transmission for long enough time so that the sender could receive the CTS packet from the destined receiver

Question 35

Complete

Mark 1.00 out of
1.00

In Mobile IP, what is tunneling?

- a. The process of assigning a new IP address to the mobile node upon registration
- b. The process of updating the routing tables of all routers in the network
- c. A method for encapsulating IP packets destined for the mobile node's home network while it is away
- d. A technique used to encrypt data transmission between the mobile node and the home network

Question 36

Complete

Mark 0.00 out of
1.00

What is the main advantage of Mobile IP over traditional IP routing protocols?

- a. Faster data transmission speed
- b. Lower network latency
- c. Seamless mobility for mobile devices
- d. Improved security



Question 37

Complete

Mark 1.00 out of
1.00

Calculate the received power by a receiver antenna with gain $G_r = 2$. The power transmitted by the transmitter at 15 km distance is 50 watts with operating frequency of $f_c = 890$ MHz, unity gain antenna.

- a. +15.86 dBm
- b. +68 dBm
- c. None of these
- d. -68 dBm

Question 38

Complete

Mark 1.00 out of
1.00

Which GSM security feature provides mutual authentication between the mobile device and the network?

- a. International Mobile Subscriber Identity (IMSI) catching
- b. Authentication Key (Ki)
- c. IMEI blocking
- d. Ciphering

Question 39

Complete

Mark 1.00 out of
1.00

What is the purpose of the guard interval in OFDM?

- a. To provide security
- b. To protect against frequency-selective fading
- c. To guard against Inter Symbol Interference (ISI)
- d. To increase the data rate

Question 40

Complete

Mark 1.00 out of
1.00

What is the primary advantage of OFDM in wireless communication systems?

- a. Increased spectral efficiency
- b. Lower latency
- c. Reduced power consumption
- d. Simplified receiver design



Question **41**

Complete

Mark 1.00 out of
1.00

Which of the following statement is incorrect

- a. None of these
- b. In OFDM (Orthogonal Frequency Division Multiplexing), the ICI (Inter-carrier-Interference) and ISI (Inter-Symbol-Interference) problem is less.



- c. OFDM (Orthogonal Frequency Division Multiplexing) provides a high spectral efficiency and data rate.
- d. In OFDM (Orthogonal Frequency Division Multiplexing), the PARP (Peak to average power ratio) is less.

Question **42**

Complete

Mark 1.00 out of
1.00

The 5G technology uses

- a. Microwave
- b. Infrared wave
- c. Millimeter wave
- d. None of these

Question **43**

Complete

Mark 1.00 out of
1.00

Sound Navigation and Ranging (SONAR) technology uses _____ for communication.

- a. Microwaves
- b. LASER
- c. Ultrasonic waves
- d. Infrared waves

Question **44**

Complete

Mark 1.00 out of
1.00

In a closed room environment with several scattered objects, a signal is going to fade due to

- a. Small scale fading
- b. None of these
- c. Large scale fading
- d. Both small and large scale fading

Question **45**

Complete

Mark 1.00 out of
1.00

A spectrum of 30 MHz is allocated to a cellular system which uses two 25 KHz simplex channels to provide full duplex voice channels. What is the number of channels available per cell for 3 cell reuse factor?

- a. 150 channels
- b. 200 channels
- c. 300 channels
- d. None of these



Question 46

Complete

Mark 1.00 out of
1.00

How does the borrowing strategy adapt to changes in network conditions in GSM networks?

- a. By increasing the number of available frequency bands
- b. By adjusting the transmit power of base stations
- c. By reallocating channels based on real-time traffic measurements
- d. By prioritizing voice calls over data transmissions

Question 47

Complete

Mark 1.00 out of
1.00

In Mobile IP, what is the purpose of the Care-of-Address (CoA)?

- a. It is the IP address of the Correspondent Node (CN)
- b. It is the temporary IP address assigned to the mobile node when visiting a foreign network
- c. It is the IP address of the Home Agent (HA)
- d. It is the permanent IP address assigned to the mobile node

Question 48

Complete

Mark 1.00 out of
1.00

An unauthorized access of information from a wireless device through a Bluetooth connection is called _____

- a. Blueprint
- b. Bluestring
- c. Bluesnarfing
- d. None of these

Question 49

Complete

Mark 1.00 out of
1.00

A transceiver module in a wireless sensor network contains which component internally?

- a. Wires
- b. None of these
- c. Antennas
- d. Electrodes

Question 50

Complete

Mark 0.00 out of
1.00

In a SYN Flood attack, what is the objective of the attacker?

- a. To redirect legitimate traffic to a malicious destination
- b. To flood the target server with a large number of SYN-ACK packets
- c. To flood the target server with a large number of ACK packets
- d. To exhaust the server's resources by sending a flood of TCP SYN packets



Question 51

Complete

Mark 1.00 out of
1.00

The UMTS is based on _____ multiple access technique.

- a. FDMA
- b. CDMA
- c. SDMA
- d. TDMA

Question 52

Complete

Mark 1.00 out of
1.00

Which of the following statement is incorrect

- a. In hard handoff, the mobile unit simultaneously remain connected to more than one Base station (BS).
- b. In hard handoff, the existing connection with the Base station (BS) must be broken before establishing a connection with a new BS
- c. In soft handoff, a new connection is established before the old one is released.
- d. All of these

Question 53

Complete

Mark 1.00 out of
1.00

In a GPRS network, Serving GPRS Support Node is the equivalent of _____ system in GSM.

- a. BSC
- b. MSC
- c. VLR
- d. AuC



Question 54

Complete

Mark 1.00 out of
1.00

A base station (BS) is transmitting with a power of 75 watt at frequency $f_c = 915$ MHz, the distance between the BS and the receiver mobile unit is 50 m. Calculate the power received in dBm by the mobile unit considering free space propagation, where both the transmitting and receiving antenna has unit gain.

- a. -16.89 dBm
- b. None of these
- c. 16.89 dBm
- d. 2.046×10^{-2} dBm

Question 55

Complete

Mark 1.00 out of
1.00

Which of the following is a Transport layer attack?

- a. Byzantine attack
- b. Malicious code attack
- c. SYN flooding attack
- d. Blackhole attack

Question 56

Complete

Mark 1.00 out of
1.00

Why is a cyclic prefix required in Orthogonal Frequency Division Multiplexing?

- a. To help overcome Inter Symbol Interference (ISI)
- b. To ensure symbol time is an integer number
- c. To maintain orthogonality
- d. None of these

Question 57

Complete

Mark 1.00 out of
1.00

The interface between a mobile user and its nearest base transceiver station is

- a. None of these
- b. A Interface
- c. Abis Interface
- d. Air Interface



Question 58

Complete

Mark 1.00 out of
1.00

Which of the following statement is incorrect

- a. In BPSK (Quadrature Phase Shift Keying), the maximum transition between two symbols yields to a phase shift of $\pm 180^\circ$
- b. In QPSK (Quadrature Phase Shift Keying), the maximum transition between two symbols yields to a phase shift of $\pm 180^\circ$
- c. In OQPSK (Quadrature Phase Shift Keying), the maximum transition between two symbols yields to a phase shift of $\pm 135^\circ$
- d. In $\frac{\pi}{4}$ QPSK (Quadrature Phase Shift Keying), the maximum transition between two symbols yields to a phase shift of $\pm 135^\circ$

Question 59

Complete

Mark 1.00 out of
1.00

The uplink and downlink frequency bands of cellular GSM system are

- a. None of these
- b. Uplink 890-915 MHz, Downlink 935-960 MHz
- c. Uplink 1710-1785 MHz, Downlink 1805-1880 MHz
- d. Uplink 935-960 MHz, Downlink 890-915 MHz

Question 60

Complete

Mark 1.00 out of
1.00

A spectrum of 60 MHz is allocated to a wireless cellular system which uses 50 KHz of duplex channel for communication. For cluster size $N = 7$ and replication factor $M = 4$, calculate the total capacity offered by the cellular system.

- a. None of these
- b. 4200
- c. 4400
- d. 4800

Question 61

Complete

Mark 1.00 out of
1.00

In a cellular network, what causes neighboring or adjacent channel interference?

- a. Interference from cells using the same frequency channels
- b. Interference from weather phenomena such as lightning
- c. Interference from microwave ovens and other household appliances
- d. Interference from malicious attackers



Question **62**

Complete

Mark 0.00 out of
1.00

What distinguishes a DDoS attack from a DoS attack?

- a. DDoS attacks use sophisticated hacking techniques
- b. There is no difference between DoS and DDoS attacks
- c. DDoS attacks target only large corporations
- d. DDoS attacks are launched by multiple attackers simultaneously

Question **63**

Complete

Mark 0.00 out of
1.00

Which GSM security measure prevents unauthorized devices from accessing the GSM network?

- a. Authentication
- b. IMEI blocking
- c. Ciphering
- d. TMSI reallocation

Question **64**

Complete

Mark 1.00 out of
1.00

How does high PAPR affect the efficiency of power amplifiers in OFDM systems?

- a. It reduces the need for power amplification
- b. It requires high-power amplifiers, leading to decreased efficiency
- c. It improves power amplifier efficiency
- d. It has no impact on power amplifier efficiency

Question **65**

Complete

Mark 1.00 out of
1.00

Determine the signal-to-interference ratio (SIR) in dB, for path loss $n = 3$, and $i = 1, j = 1$. There are 9 co-channel cells in cellular system.

- a. 3.0 dB
- b. 4.5 dB
- c. 5.3 dB
- d. 4.0 dB

Question 66

Complete

Mark 1.00 out of
1.00

How does the Packet Control Unit (PCU) contribute to the efficiency of data transmission in GPRS?

- a. By optimizing the allocation of radio resources for packet dataBy optimizing the allocation of radio resources for packet data
- b. By managing voice call connections
- c. By establishing physical connections between mobile
- d. By encrypting data packets for secure transmission

Question 67

Complete

Mark 0.00 out of
1.00

Which entity is responsible for managing the mobility of a mobile node in Mobile IP?

- a. Mobile Node (MN)
- b. Correspondent Node (CN)
- c. Home Agent (HA)
- d. Foreign Agent (FA)

Question 68

Complete

Mark 1.00 out of
1.00

A base station (BS) is transmitting with a power of 50 watt at frequency $f_c = 915 \text{ MHz}$, the distance between the BS and the receiver mobile unit is 100 m. Calculate the power received in dBm by the mobile unit considering free space propagation, where both the transmitting antenna has unit gain and receiving antenna has a gain 2dB.

- a. -16.525 dBm
- b. -21.668 dBm
- c. -22.530 dBm
- d. None of these

Question 69

Complete

Mark 1.00 out of
1.00

What frequency band is commonly used for UMTS deployments?

- a. 1800 MHz
- b. 800 MHz
- c. 2600 MHz
- d. 2100 MHz



Question 70

Complete

Mark 1.00 out of
1.00

What is the primary purpose of a Man-in-the-Middle (MITM) attack?

- a. To forge the source IP address in packets to impersonate a trusted entity
- b. To flood the target server with a large number of packets
- c. To redirect legitimate traffic to a malicious destination
- d. To intercept and modify communication between two parties

Question 71

Complete

Mark 1.00 out of
1.00

Which layer in the protocol stack is targeted for jamming attack?

- a. Application Layer
- b. MAC Layer
- c. Network Layer
- d. Transport Layer

Question 72

Complete

Mark 1.00 out of
1.00

What type of network topology does LEACH create in wireless sensor networks?

- a. Clustered
- b. Ring
- c. Star
- d. Mesh

Question 73

Complete

Mark 1.00 out of
1.00

What is the primary difference between 4G LTE and 4G VoLTE networks?

- a. LTE focuses on data transmission, while VoLTE focuses on voice calls
- b. LTE uses circuit-switched technology, while VoLTE uses packet-switched technology
- c. LTE provides higher data speeds, while VoLTE provides better voice quality
- d. LTE operates on different frequency bands than VoLTE

Question 74

Complete

Mark 1.00 out of
1.00

If a user is in a voice call and also want to use his/her data connection uninterrupted then which network will be preferred

- a. VoLTE
- b. None of these
- c. LTE



Question 75

Complete

Mark 0.00 out of
1.00

Which factor determines the severity of PAPR in OFDM systems?

- a. Signal bandwidth
- b. Number of subcarriers
- c. Modulation scheme used
- d. Carrier frequency spacing

Question 76

Complete

Mark 1.00 out of
1.00

The Adhoc network is a centralized type of network

- a. True
- b. False

Question 77

Complete

Mark 1.00 out of
1.00

The interface between the UTRAN (UMTS Terrestrial Radio Access Network) and the CN (Core Network) is

- a. Iu interface
- b. None of these
- c. Iur interface
- d. Lub interface

Question 78

Complete

Mark 1.00 out of
1.00

In a dense urban environment, path loss exponent $n = 4.5$ and there are 8 channel cells in cellular system. The minimum required signal to interference ratio is 13 dB. Determine the smallest cluster size needed to maintain this minimum SIR.

- a. 4
- b. 5
- c. 3
- d. 2



Question 79

Complete

Mark 1.00 out of
1.00

The relationship between coherence time and coherence bandwidth is

- a. None of these
- b. $\tau_c = \frac{1}{BW}$
- c. $\tau_c = BW$
- d. $\tau_c = \frac{1}{BW^2}$

Question 80

Complete

Mark 1.00 out of
1.00

What is the purpose of the rotation of cluster heads in LEACH?

- a. To prioritize certain nodes for data transmission
- b. To prevent nodes from becoming cluster heads in consecutive rounds, so that battery drainage of a single node can be prevented
- c. To maintain a stable topology in the network
- d. All of these

Question 81

Complete

Mark 1.00 out of
1.00

Which of the following statements best describes the relationship between cell splitting and cell sectoring?

- a. Cell splitting is a technique used to increase the number of sectors within a cell.
- b. Cell sectoring is a technique used to divide a cell into smaller cells.
- c. Cell splitting and cell sectoring are unrelated concepts in cellular architecture.
- d. Cell splitting and cell sectoring are interchangeable terms.

Question 82

Complete

Mark 0.00 out of
1.00

What is the primary challenge in mitigating Disturbed Denial of Service attacks?

- a. Upgrading hardware infrastructure
- b. Filtering legitimate traffic from malicious traffic
- c. Encrypting sensitive data
- d. Identifying the attacker



Question 83

Complete

Mark 1.00 out of
1.00

Which one is not a characteristics of a coherence bandwidth channel?

- a. Channel bandwidth is greater than the bandwidth of the transmitted signal
- b. Nonlinear phase response
- c. Equal gain over all frequencies
- d. Linear phase response

Question 84

Complete

Mark 1.00 out of
1.00

The coverage are of a cellular system is 2700 sq km. Each hexagonal cell having a radius of 5.20 sq km. There is total 1000 radio channels allocated for the cellular system. Calculate the system capacity (C) for cluster size $N = 7$.

- a. 4500
- b. 5000
- c. None of these
- d. 4000

Question 85

Complete

Mark 1.00 out of
1.00

What is the primary purpose of Mobile IP?

- a. To encrypt data transmission on mobile networks
- b. To secure mobile devices from cyber attacks
- c. To allow mobile devices to maintain connectivity while moving between networks
- d. To assign unique IP addresses to mobile devices

Question 86

Complete

Mark 0.00 out of
1.00

In an AMPS cellular operator, there are 355 channels of 33 KHz each in a bandwidth of 12.5 MHz. If a narrowband TDMA system is used with frame duration 40 ms, with 8 time slots per frame, duration of time slot that carries data is 4.25 ms, then calculate the spectral efficiency of the TDMA system.

- a. None of these
- b. 94%
- c. 100%
- d. 80%



Question **87**

Complete

Mark 1.00 out of
1.00

What role does the Foreign Agent (FA) play in Mobile IP?

- a. It assists in routing packets to and from the mobile node's home network
- b. It assigns a temporary IP address to the mobile node
- c. It authenticates the mobile node's identity
- d. It tracks the location of the mobile node

Question **88**

Complete

Mark 1.00 out of
1.00

Which one of the following is not a characteristic of ADHOC network?

- a. No fixed infrastructure
- b. Energy-constrained
- c. Fixed infrastructure
- d. Dynamic changing topology

Question **89**

Complete

Mark 0.00 out of
1.00

In MACA protocol, which of the following packet avoids hidden terminal problem

- a. None of these
- b. CTS (clear to send)
- c. ACK
- d. RTS (request to send)

Question **90**

Complete

Mark 1.00 out of
1.00

Which of the following is not a phase in the LEACH protocol?

- a. Setup phase
- b. Cluster formation phase
- c. Data collection phase
- d. Steady-state phase

Question **91**

Complete

Mark 1.00 out of
1.00

What is the typical communication pattern between cluster heads and the base station in LEACH?

- a. Broadcast
- b. Multicast
- c. Unicast
- d. All of these



Question 92

Complete

Mark 1.00 out of
1.00

In Orthogonal Frequency Division Multiplexing, the guard interval is provided to

- a. None of these
- b. To eliminate Inter Symbol Interference (ISI)
- c. To attain high symbol rate
- d. To maintain orthogonality

Question 93

Complete

Mark 1.00 out of
1.00

What is the primary purpose of cell splitting in cellular networks?

- a. To enhance encryption for secure data transmission
- b. To improve coverage in areas with high user density
- c. To reduce interference between neighboring cells
- d. To increase the number of available frequency bands

Question 94

Complete

Mark 1.00 out of
1.00

Inter Symbol Interference is a phenomenon occurs in

- a. Time domain
- b. both frequency and time domain
- c. Frequency domain
- d. None of these

Question 95

Complete

Mark 1.00 out of
1.00

In Low Energy Adaptive Clustering Hierarchy protocol, the communication between the nodes and the cluster head node is done using

- a. FDMA
- b. TDMA
- c. SDMA
- d. CDMA

Question 96

Complete

Mark 0.00 out of
1.00

Which of the following is not a component of the UMTS core network?

- a. Home Location Register (HLR)
- b. Serving GPRS Support Node (SGSN)
- c. Base Transceiver Station (BTS)
- d. Gateway GPRS Support Node (GGSN)



Question **97**

Complete

Mark 1.00 out of
1.00

In comparison to UMTS, how does 4G LTE architecture address the growing demand for mobile data services?

- a. By relying on traditional circuit-switched networks for voice communication
- b. By increasing the number of frequency bands available for communication
- c. By reducing the complexity of the core network to improve scalability
- d. By implementing advanced radio access technologies such as OFDM and MIMO

Question **98**

Complete

Mark 0.00 out of
1.00

Which protocol is used by Mobile IP for registration and tunneling purposes?

- a. IPsec (Internet Protocol Security)
- b. UDP (User Datagram Protocol)
- c. ICMP (Internet Control Message Protocol)
- d. TCP (Transmission Control Protocol)

Question **99**

Complete

Mark 0.00 out of
1.00

Which layer in the protocol stack is targeted for Denial of service attack?

- a. Network Layer
- b. Multi Layer
- c. Application Layer
- d. Transport Layer

Question **100**

Complete

Mark 1.00 out of
1.00

In GSM networks, what is a "borrowed" channel?

- a. A channel reserved for emergency calls only
- b. A channel temporarily assigned from a neighboring cell to handle excess traffic
- c. A channel dedicated to data transmission services
- d. A channel allocated to a specific subscriber for an extended period



Question 101

Complete

Mark 1.00 out of
1.00

To avoid cell dragging which parameters has to carefully handled

- a. Transmitting power of Base Station (BS)
- b. Distance between the BS and the mobile unit
- c. Both transmitting power of BS and distance between the BS and the mobile unit
- d. Handoff threshold

Question 102

Complete

Mark 1.00 out of
1.00

In GSM cellular networks, what is the primary purpose of the borrowing strategy in channel assignment?

- a. To optimize the utilization of available radio resources
- b. To prioritize voice calls over data transmissions
- c. To enhance security against unauthorized access
- d. To minimize interference between adjacent cells

Question 103

Complete

Mark 1.00 out of
1.00

In Low Energy Adaptive Clustering Hierarchy protocol, the communication between the nodes and the cluster head node is done using

- a. SDMA
- b. FDMA
- c. CDMA
- d. TDMA

Question 104

Complete

Mark 1.00 out of
1.00

The attacker instead of compromising a single computer & its internet bandwidth, a _____ utilizes various systems & their connections for flooding the targeted website.

- a. None of these
- b. Point-of-sale malware (POS) attack
- c. Denial of Service (DoS) attack
- d. Distributed Denial of Service (DDoS) attack



Question 105

Complete

Mark 1.00 out of
1.00

What is the primary impact of co-channel interference on cellular networks?

- a. Degradation of call quality and increased call drops
- b. Reduced latency in data transmission
- c. Improved signal strength and coverage
- d. Enhanced security against eavesdropping

Question 106

Complete

Mark 1.00 out of
1.00

What is a cluster in cellular system?

- a. A large group of mobile systems
- b. A small geographic area
- c. A group of cells
- d. A group of subscribers

Question 107

Complete

Mark 0.00 out of
1.00

In MACA protocol, a neighboring node near the sender which receives RTS (request to send) packet

- a. will not transmits till it receives the data packet
- b. will delay the transmission for long enough time so that the sender could receive the CTS packet from the destined receiver
- c. will transmit RTS-CTS packets as per the requirements
- d. will delay the transmission it receives the CTS packet

Question 108

Complete

Mark 1.00 out of
1.00

In a DoS attack, what is the primary objective of the attacker?

- a. Gain unauthorized access to the system
- b. Encrypt sensitive data
- c. Overwhelm a system or network, rendering it unavailable
- d. Steal personal information

Question 109

Complete

Mark 0.00 out of
1.00

Cell splitting involves dividing a large cell into smaller cells. What term is used to describe the process of dividing cells into smaller geographic areas?

- a. Cell clustering
- b. Cell partitioning
- c. Cell zoning
- d. Cell sectoring



Question 110

Complete

Mark 1.00 out of
1.00

Which of the following is a characteristic of MANET (Mobile Ad hoc Network)?

- a. Mobility of nodes
- b. High data throughput
- c. Centralized control
- d. Fixed network infrastructure

Question 111

Complete

Mark 1.00 out of
1.00

For a roaming user who is visiting a new MSC, the **IMSI** (International Mobile Subscriber Identity) will be temporarily stored in _____

- a. All of these
- b. VLR (Visitor Location Register)
- c. AuC (Authentication Center)
- d. HLR (Home Location Register)

Question 112

Complete

Mark 1.00 out of
1.00

In LEACH, what technique is used to reduce energy consumption during data transmission?

- a. Code division multiple access (CDMA)
- b. Time division multiple access (TDMA)
- c. Spatial division multiple access (SDMA)
- d. Frequency division multiple access (FDMA)

Question 113

Complete

Mark 1.00 out of
1.00

In MAHO, what does the mobile station (MS) measure to determine neighboring cells?

- a. Transmission power
- b. Received signal strength indicator (RSSI)
- c. Carrier frequency offset
- d. Timing advance

Question 114

Complete

Mark 0.00 out of
1.00

What advantage does cell sectoring offer in terms of network capacity?

- a. It allows for more efficient spectrum reuse
- b. It reduces the number of handovers between cells
- c. It increases the number of available frequency bands
- d. It minimizes the occurrence of dropped calls



Question 115

Complete

Mark 0.00 out of
1.00

What is the primary objective of the Low Energy Adaptive Clustering Hierarchy (LEACH) protocol?

- a. Maximizing network throughput
- b. Extending the network lifetime
- c. Minimizing end-to-end delay
- d. Enhancing data security

Question 116

Complete

Mark 1.00 out of
1.00Relation between system capacity (**C**) of a cellular system with frequency reuse factor (**Q**) and distance between co-channel cells (**R**)

- a. **R** increases, **Q** increases and **C** increases
- b. **R** increases, **Q** increases and **C** decreases
- c. **R** increases, **Q** decreases and **C** increases
- d. **R** decreases, **Q** increases and **C** increases

Question 117

Complete

Mark 1.00 out of
1.00

What is the primary advantage of GPRS compared to traditional GSM?

- a. Higher voice quality
- b. Longer battery life
- c. Greater coverage range
- d. Faster data transmission

Question 118

Complete

Mark 1.00 out of
1.00Find the value of frequency reuse factor Q of a cellular system for $i = 0, j = 2$

- a. 6.25
- b. a. 5.75
- c. 4.58
- d. 3.46



Question 119

Complete

Mark 1.00 out of
1.00

Which layer of the protocol stack is targeted for wormhole attack?

- a. MAC Layer
- b. Transport Layer
- c. Application Layer
- d. Network Layer

Question 120

Complete

Mark 1.00 out of
1.00

Which of the statement is incorrect among the following

- a. The PCU (Packet Control Unit) in GPRS directs only the packet switched data to GPRS network.
- b. The PCU (Packet Control Unit) in GPRS directs the circuit switched data to GPRS network and packet switched data to standard GSM network.
- c. The PCU (Packet Control Unit) in GPRS directs the circuit switched data to standard GSM network and packet switched data to GPRS network.
- d. None of these

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