

MSBTE

Wireless Mobile Network MCQ Book



BY

Apni University

India's No.1 Digital Book Compay

Preface

The importance of **Wireless Mobile Network** is well known in various engineering fields. Overwhelming response to our last year **exam sutra** series inspired us to create this book. This book is structure to cover the key aspects of the subject **WMN**.

All the questions in the book are very important for the upcoming MSBTE summer 2020 exam. All care has been taken to make students comfortable in understanding the basic concepts of the subject.

The most important part of this kit is, we are not only providing the books but the exams too at three different levels (basic, intermediate & advanced). The students only need to study the book and co-operate us till exam.

We wish to express our profound thanks to all those who helped in making this book realty. Much needed moral support and encouragement is provided on numerous occasions by our whole family. We wish to thank the entire team of **Apni University** who has taken immense pain to get this book in time with this quality.

Any suggestion for the improvement of the books will be acknowledged and well appreciated.

Question

Which of the following is the world's first cellular system to specify digital modulation and network level architecture?

- a) **GSM**
- b) AMPS
- c) CDMA
- d) IS-54

Question

Previously in 1980s, GSM stands for _____

- a) Global system for mobile
- b) **Groupe special mobile**
- c) Global special mobile
- d) Groupe system mobile

Question

Who sets the standards of GSM?

- a) ITU

b) AT & T

c) ETSI

d) USDC

Question

Which of the following does not come under the teleservices of GSM?

a) Standard mobile telephony

b) Mobile originated traffic

c) Base originated traffic

d) Packet switched traffic

Question

Which of the following comes under supplementary ISDN services?

a) Emergency calling

b) Packet switched protocols

c) Call diversion

d) Standard mobile telephony

Question

Which of the following memory device stores information such as subscriber's identification number in GSM?

- a) Register
- b) Flip flop
- c) SIM**
- d) SMS

Question

Which of the following feature makes impossible to eavesdrop on GSM radio transmission?

- a) SIM
- b) On the air privacy**
- c) SMS
- d) Packet switched traffic

Question

Which of the following does not come under subsystem of GSM architecture?

- a) BSS
- b) NSS
- c) OSS
- d) Channel

Question

Which of the following subsystem provides radio transmission between mobile station and MSC?

- a) BSS
- b) NSS
- c) OSS
- d) BSC

Question

_____ manages the switching function in GSM.

- a) BSS
- b) NSS
- c) OSS
- d) MSC

Question

_____ supports the operation and maintenance of GSM.

- a) BSS
- b) NSS
- c) OSS**
- d) MSC

Question

_____ carries digitally encoded user data.

- a) Traffic channels**
- b) Control channels
- c) Signalling channels
- d) Forward channels

Question

_____ carries signalling and synchronizing commands.

- a) Traffic channels
- b) Control channels**

c) Signalling channels

d) Forward channels

Question

Which of the following is not a control channel of GSM?

a) BCH

b) CCCH

c) DCCH

d) TCH

Question

Which of the following is the forward control channel that is used to broadcast information?

a) BCCH

b) CCCH

c) DCCH

d) TCH

Question

Which of the following channel does not come under CCCH?

- a) PCH
- b) RACH
- c) DCCH
- d) AGCH

Question

Which of the following channel provides paging signals from base station to all mobiles in the cell?

- a) RACH
- b) AGCH
- c) DCCH
- d) PCH

Question

_____ is a reverse link channel used by a subscriber unit to acknowledge.

- a) RACH
- b) AGCH
- c) DCCH
- d) PCH

Question

Which of the following channel is used by base station to provide forward link communication to mobile?

- a) RACH
- b) AGCH
- c) DCCH
- d) PCH

Question

Which of the following burst is used to broadcast the frequency and time synchronization control messages?

- a) FCCH and SCH
- b) TCH and DCCH

- c) RACH and TCH
- d) FCCH and DCCH

Question

Which of the following burst is used to access service from any base station?

- a) TCH
- b) RACH**
- c) SCH
- d) FCCH

Question

Group of superframes in GSM is called multiframe.

- a) True
- b) False**

Question

PCS/PCN provides only wired communication.

- a) True
- b) False**

Question

Concept of PCS/PCN is based on _____

- a) **Advanced intelligent network**
- b) Artificial intelligent network
- c) CDPD
- d) SS7

Question

AIN has different telephone numbers for both wireline and wireless services.

- a) True
- b) **False**

Question

Circuit switching has more advantage than packet switching for PCS.

- a) True
- b) **False**

Question

_____ is used for transmission of packets in the cellular switched architecture.

- a) Packet switching techniques
- b) Circuit switching techniques
- c) Packet and circuit switched technique
- d) Datagram technique

Question

Which of the following has the function to accept information from PSTN?

- a) TIU
- b) WIU
- c) BIU
- d) CIU

Question

PTI is the address of _____

- a) TIU
- b) WIU
- c) BIU
- d) CIU

Question

_____ is the information contained in the packet header of TIU.

- a) PTI
- b) VCI**
- c) PRMA
- d) CDPD

Question

Transmission protocol, PRMA stands for _____

- a) Pocket reservation multiple access
- b) Packet register multiple access
- c) Pocket register multiple access
- d) Packet reservation multiple access**

Question

UMTS stands for _____

- a) Universal mobile telecommunication system
- b) Universal mobile telephone system

- c) United multiplex telecommunication system
- d) Universal mobile telecommunication system

Question

In a wireless communication, base station is connected to central hub called

- a) PSTN
- b) MSC
- c) CO
- d) PBX

Question

PSTN stands for _____

- a) Public switched telephone network
- b) Personal switched telephone network
- c) Personal switched telephone node
- d) Public switched telephone node

Question

MSCs provide connectivity between PSTN and the base stations.

- a) True
- b) False

Question

Communication protocol, CAI stands for _____

- a) Common air interchange
- b) Control air interchange
- c) Common air interface
- d) Control air interchange

Question

At the base station, the air interface portion of mobile transmission is passed to MSC.

- a) True
- b) False

Question

PSTN is _____ and wireless networks are _____

- a) Highly dynamic, virtually static
- b) Static, virtually static
- c) Highly dynamic, virtually dynamic
- d) **Virtually static, highly dynamic**

Question

In public switched telephone network, LATA stands for _____

- a) **Local access and transport area**
- b) Land area and transport area
- c) Local access and telephone access
- d) Local area and telephone access

Question

LATAs are connected by a company called _____

- a) Land exchange carrier
- b) **Local exchange carrier**

- c) Local control exchange
- d) Land area exchange

Question

A long distance telephone company that collects toll is called _____

- a) LATA
- b) LEC
- c) PSTN
- d) IXC

Question

Wireless networks are extremely hostile and random nature of radio channel.

- a) True
- b) False

Question

Which type of cell provides the best level of service for average subscribers?

- a) Acceptance cell
- b) Barred cell

c) Reserved cell

d) Suitable cell

Question

With the normal cyclic prefix, how many symbols are contained in 1 frame?

a) 7

b) 140

c) 12

d) 40

Question

What is the PBCH scrambled with?

a) Current frame number

b) Physical cell ID

c) UE's CRNTI

d) Not scrambled

Question

What is the length of the shortest possible PDCCH in bits?

- a) 144
- b) 288
- c) 72
- d) 576

Question

What is the average uploading speed of 4G LTE network?

- a) 1-3 Gbps
- b) 2-5 Gbps
- c) 1-3 Mbps
- d) 2-5 Mbps

Question

Which of the following is not a part of the characteristic of 4G network?

- a) **Multirate management**
- b) Fully converged services
- c) Software dependency
- d) Diverse user devices

Question

What does SGSN stands for?

- a) Serial Gateway Supporting Node
- b) Supporting GGSN Support Node
- c) **Supporting GPRS Support Node**
- d) Supporting Gateway Support Node

Question

What location management feature is supported by 4G?

- a) **Concatenated Location Registration**
- b) Concurrent Location Register

- c) Concatenated Management
- d) Collated Location Registration

Question

In 2007 _____ announced its plan to transmit its network to 4G standard LTE with joint efforts of Vodafone group.

- a) Verizon Wireless
- b) AirTouch
- c) Netflix
- d) V Cast

Question

Hybrid ARQ is part of the _____ layer.

- a) PDCP
- b) RLC
- c) MAC
- d) PHY

Question

What is the full form of WLAN?

- a) Wide Local Area Network
- b) Wireless Local Area Network**
- c) Wireless Land Access Network
- d) Wireless Local Area Node

Question

WLANs use high power levels and generally require a license for spectrum use.

- a) True
- b) False**

Question

What is the name of 300 MHz of unlicensed spectrum allocated by FCC in ISM band?

- a) UNII**
- b) Unlicensed PCS
- c) Millimetre wave
- d) Bluetooth

Question

Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?

- a) IEEE 802.16
- b) IEEE 802.3
- c) IEEE 802.11
- d) IEEE 802.15

Question

Which of the following is not a standard of WLAN?

- a) HIPER-LAN
- b) HIPERLAN/2
- c) IEEE 802.11b
- d) AMPS

Question

Which of the following is the 802.11 High Rate Standard?

- a) IEEE 802.15

- b) IEEE 802.15.4
- c) IEEE 802.11g
- d) IEEE 802.11b**

Question

Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard?

- a) FHSS and DSSS**
- b) THSS and FHSS
- c) THSS and DSSS
- d) Hybrid technique

Question

Which of the following WLAN standard has been named Wi-Fi?

- a) IEEE 802.6
- b) IEEE 802.15.4
- c) DSSS IEEE 802.11b**
- d) IEEE 802.11g

Question

Which of the following is developing CCK-OFDM?

- a) IEEE 802.11a
- b) IEEE 802.11b
- c) IEEE 802.15.4
- d) IEEE 802.11g

Question

What is the data rate of HomeRF 2.0?

- a) 10 Mbps
- b) 54 Mbps
- c) 200 Mbps
- d) 1 Mbps

Question

HIPER-LAN stands for _____

- a) High Precision Radio Local Area Network
- b) High Performance Radio Local Area Network

- c) High Precision Radio Land Area Network
- d) Huge Performance Radio Link Access Node

Question

What is the range of asynchronous user data rates provided by HIPER-LAN?

- a) 1-100 Mbps
- b) 50-100 Mbps
- c) 1-20 Mbps
- d) 500 Mbps to 1 Gbps

Question

What is the name of the European WLAN standard that provides user data rate upto 54 Mbps?

- a) UNII
- b) WISP
- c) MMAC
- d) HIPERLAN/2

Question

What is WISP?

- a) Wideband Internet Service Protocol
- b) Wireless Internet Service Provider**
- c) Wireless Instantaneous Source Provider
- d) Wideband Internet Source Protocol

Question

The price of WLAN hardware is more than 3G telephones and fixed wireless equipment.

- a) True
- b) False**

Question

Which of the following is not an open standard?

- a) Bluetooth
- b) WWW
- c) HTML
- d) VPN**

Question

What is the nominal range of Bluetooth?

- a) 1 Km
- b) 10 m**
- c) 1 m
- d) 10 Km

Question

Bluetooth standard is named after _____

- a) King Ronaldo Bluetooth
- b) Pope Vincent Bluetooth
- c) King Herald Bluetooth**
- d) Pope Francis Bluetooth

Question

Bluetooth operates in which band?

- a) Ka Band
- b) L Band

c) Ku Band

d) 2.4 GHz ISM Band

Question

Which of the following scheme is used by Bluetooth?

a) Frequency hopping TDD scheme

b) Frequency hopping FDD scheme

c) DSSS TDD scheme

d) DSSS FDD scheme

Question

What is the range of time slot in Bluetooth?

a) 120 milliseconds

b) 625 microseconds

c) 577 microseconds

d) 5.7 seconds

Question

Which modulation scheme is used by Bluetooth?

- a) DQPSK
- b) MSK
- c) GFSK
- d) BPSK

Question

What is the channel symbol rate in Bluetooth for each user?

- a) 270.833 Kbps
- b) 1 Gbps
- c) 100 Mbps
- d) 1 Mbps

Question

What is the raw channel bit error rate of Bluetooth?

- a) 10^{-3}
- b) 10^{-10}
- c) 10^3
- d) 10^{-1}

Question

Which of the following standard committee specifies Bluetooth and other Personal Area Networks (PAN)?

- a) IEEE 802.11b
- b) IEEE 802.15**
- c) IEEE 802.11g
- d) IEEE 802.16

Question

What is the access point (AP) in a wireless LAN?

- a) device that allows wireless devices to connect to a wired network**
- b) wireless devices itself
- c) both device that allows wireless devices to connect to a wired network and wireless devices itself
- d) all the nodes in the network

Question

In wireless ad-hoc network _____

- a) access point is not required**

- b) access point is must
- c) nodes are not required
- d) all nodes are access points

Question

Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

- a) CDMA
- b) CSMA/CA**
- c) ALOHA
- d) CSMA/CD

Question

In wireless distribution system _____

- a) multiple access point are inter-connected with each other**
- b) there is no access point
- c) only one access point exists
- d) access points are not required

Question

A wireless network interface controller can work in _____

- a) infrastructure mode
- b) ad-hoc mode
- c) both infrastructure mode and ad-hoc mode
- d) WDS mode

Question

In wireless network an extended service set is a set of _____

- a) connected basic service sets
- b) all stations
- c) all access points
- d) connected access points

Question

Mostly _____ is used in wireless LAN.

- a) time division multiplexing
- b) orthogonal frequency division multiplexing

- c) space division multiplexing
- d) channel division multiplexing

Question

Which one of the following event is not possible in wireless LAN?

- a) collision detection
- b) acknowledgement of data frames
- c) multi-mode data transmission
- d) connection to wired networks

Question

What is Wired Equivalent Privacy (WEP)?

- a) security algorithm for ethernet
- b) security algorithm for wireless networks
- c) security algorithm for usb communication
- d) security algorithm for emails

Question

What is WPA?

- a) wi-fi protected access
- b) wired protected access
- c) wired process access
- d) wi-fi process access

Question

Which of the following is not a characteristic of 3G network?

- a) Communication over VoIP
- b) Unparalleled network capacity
- c) Multi-megabit Internet access
- d) LTE based network

Question

What is the term used by ITU for a set of global standards of 3G systems?

- a) IMT 2000
- b) GSM
- c) CDMA
- d) EDGE

Question

Which of the following leads to evolution of 3G networks in CDMA systems?

- a) IS-95
- b) IS-95B
- c) CdmaOne
- d) Cdma2000

Question

Which of the following leads to the 3G evolution of GSM, IS-136 and PDC systems?

- a) W-CDMA
- b) GPRS
- c) EDGE
- d) HSCSD

Question

What is 3GPP?

- a) Project based on W-CDMA
- b) Project based on cdma2000

- c) Project based on 2G standards
- d) Project based on 2.5G standards

Question

What is 3GPP2?

- a) Project based on W-CDMA
- b) Project based on cdma2000**
- c) Project based on 2G standards
- d) Project based on 2.5G standards

Question

Which of the following is not a standard of 3G?

- a) UMTS
- b) Cdma2000
- c) TD-SCDMA
- d) LTE**

Question

Which of the following 3G standard is used in Japan?

- a) Cdma2000
- b) TD-SCDMA
- c) UMTS**
- d) UTRA

Question

What does the number 2000 in IMT-2000 signifies?

- a) Year**
- b) Number of subscribers per cell
- c) Number of cells
- d) Area (Km)

Question

Which of the following is not an application of third generation network?

- a) Global Positioning System (GPS)
- b) Video conferencing

c) Mobile TV

d) Downloading rate upto 1 Gbps

Question

What is the full form of UMTS?

a) Universal Mobile Telephone System

b) Ubiquitous Mobile Telephone System

c) Ubiquitous Mobile Telemetry System

d) Universal Machine Telemedicine System

Question

UMTS use which multiple access technique?

a) CDMA

b) TDMA

c) FDMA

d) SDMA

Question

UMTS does not has backward compatibility with _____

- a) GSM
- b) IS-136
- c) IS-95
- d) GPRS

Question

UMTS is also known as _____

- a) IS-95
- b) GPRS
- c) CdmaOne
- d) W-CDMA

Question

What is the chip rate of W-CDMA?

- a) 1.2288 Mcps
- b) 3.84 Mcps

c) 270.833 Ksps

d) 100 Mcps

Question

W-CDMA works in FDD mode only.

a) True

b) False

Question

How much packet data rate per user is supported by W-CDMA if the user is stationary?

a) 2.048 Kbps

b) 100 Mbps

c) 2.048 Mbps

d) 1 Gbps

Question

What is the minimum spectrum allocation required by W-CDMA?

a) 5 MHz

- b) 20MHz
- c) 1.25 MHz
- d) 200 KHz

Question

W-CDMA requires a complete change of RF equipment at each base station.

- a) True
- b) False

Question

How much increase in spectral efficiency is provided by W-CDMA in comparison to GSM?

- a) Two times
- b) Three times
- c) No increase
- d) Six times

Question

Several protocols for upper layers in bluetooth use _____

- a) UDP
- b) HSP
- c) ITC
- d) L2CAP

Question

Protocols are set of rules to govern _____

- a) Communication
- b) Standard
- c) Metropolitan communication
- d) Bandwidth

Question

An internet is a _____

- a) Collection of WANS
- b) Network of networks
- c) Collection of LANS
- d) Collection of identical LANS and WANS

Question

Checksum is used in Internet by several protocols although not at the _____

- a) Session layer
- b) Transport layer
- c) Network layer
- d) Data link layer

Question

In version field of IPv4 header, when machine is using some other version of IPv4 then datagram is _____

- a) Discarded
- b) Accepted
- c) Interpreted
- d) Interpreted incorrectly

Question

Network layer at source is responsible for creating a packet from data coming from another _____

- a) Station

- b) Link
- c) Node
- d) Protocol

Question

Header of datagram in IPv4 has _____

- a) 0 to 20 bytes
- b) 20 to 40 bytes
- c) 20 to 60 bytes
- d) 20 to 80 bytes

Question

In IPv4 layer, datagram is of _____

- a) Fixed length
- b) Variable length
- c) Global length
- d) Zero length

Question

In IPv4, service type of service in header field, first 3 bits are called _____

- a) Type of service
- b) Code bits
- c) Sync bits
- d) Precedence bits

Question

Which is a link layer protocol?

- a) ARP
- b) TCP
- c) UDP
- d) HTTP

Question

Which protocol is commonly used to retrieve email from a mail server?

- a) FTP
- b) IMAP

- c) HTML
- d) TELNET

Question

The signals which are obtained by encoding each quantized signal into a digital word is called as

- a) PAM signal
- b) PCM signal**
- c) FM signal
- d) Sampling and quantization

Question

The length of the code-word obtained by encoding quantized sample is equal to

- a) $l = \log_2 L$**
- b) $l = \log_{10} L$
- c) $l = 2 \log_2 L$
- d) $l = \log_2 L / 2$

Question

Quantization noise can be reduced by _____ the number of levels.

- a) Decreasing
- b) Increasing**
- c) Doubling
- d) Squaring

Question

In PCM encoding, quantization level varies as a function of _____

- a) Frequency
- b) Amplitude**
- c) Square of frequency
- d) Square of amplitude

Question

What is bit depth?

- a) Number of quantization level
- b) Interval between two quantization levels

c) Number of possible digital values to represent each sample

d) None of the mentioned

Question

Choosing a discrete value that is near but not exactly at the analog signal level

leads to

a) PCM error

b) Quantization error

c) PAM error

d) Sampling error

Question

Which of the following multiple access techniques are used by second generation cellular systems?

a) FDMA/FDD and TDMA/FDD

b) TDMA/FDD and CDMA/FDD

c) FDMA/FDD and CDMA/FDD

d) FDMA/FDD only

Question

Which one is not a TDMA standard of second generation networks?

- a) GSM
- b) IS-136
- c) AMPS
- d) PDC

Question

Which of the following is a CDMA standard of second generation network?

- a) IS-95
- b) IS-136
- c) ETACS
- d) EDGE

Question

Popular 2G CDMA standard IS-95 is also known as _____

- a) CdmaOne
- b) CdmaTwo

c) IS-136

d) IS-95B

Question

How many users or voice channels are supported for each 200 KHz channel in GSM?

a) **Eight**

b) Three

c) Sixty four

d) Twelve

Question

How many voice channels are supported for each 30 KHz radio channel in IS-136?

a) Eight

b) Thirty

c) **Three**

d) Sixteen

Question

How many users are supported in IS-95 for each 1.25 MHz?

- a) Eight
- b) Sixty four**
- c) Sixteen
- d) Twenty five

Question

Which modulation technique is used by GSM?

- a) GMSK**
- b) BPSK
- c) QPSK
- d) GFSK

Question

IS-95 uses which modulation technique?

- a) GMSK
- b) BPSK**
- c) QAM
- d) AFSK

Question

IS-136 uses which modulation technique?

- a) $\pi/4$ DQPSK
- b) BPSK
- c) GMSK
- d) AFSK

Question

Which is one of the disadvantages of 2G standards?

- a) Short Messaging Service (SMS)
- b) Digital modulation
- c) Limited capacity
- d) Limited Internet Browsing

Question

GSM (Global System for Mobile) was earlier also known as _____

- a) Group System Mobile
- b) Global Special Meaning

c) Group Special Mobile

d) Global Special Mobile

Question

2G CDMA standard, IS-95, was proposed by which company?

a) Nippon Telephone and Telegraph (NTT)

b) Qualcomm

c) Bellcore and Motorola

d) AT&T Bell Laboratories

Question

Which one of the following 2G standard is used in Japan?

a) IS-136

b) GSM

c) PDC

d) AMPS

Question

The 2G GSM technology uses a carrier separation of _____

- a) 1.25 MHz
- b) 200 KHz**
- c) 30 KHz
- d) 300 KHz

Question

Which of the following has no backward compatibility with 3G Cdma2000?

- a) IS-95
- b) GPRS**
- c) IS-95A
- d) IS-95B

Question

2G and 2.5G CDMA operators may selectively introduce 3G capabilities at each cell without changing entire base stations and reallocate spectrums.

a) True

b) False

Question

Which of the following the first 3G CDMA air interface?

a) IS-95

b) IS-95B

c) Cdma2000 1xRTT

d) CdmaOne

Question

Within ITU IMT-2000 body, Cdma2000 1xRTT is also known as _____

a) Cdma2000 1xEV-DO

b) Cdma2000 1xEV-DV

c) IS-95B

d) G3G-MC-CDMA-1X

Question

How many users are supported by Cdma2000 1X in comparison to 2G CDMA standard?

- a) Half
- b) Twice**
- c) Six times
- d) Ten times

Question

Cdma2000 works in TDD mode only.

- a) True
- b) False**

Question

Which of the following is not a characteristic of Cdma2000?

- a) Adaptable baseband signalling rates
- b) Adaptable baseband chipping rates

c) Multicarrier technologies

d) OFDMA

Question

Cdma2000 1xEV was developed by _____

a) Motorola

b) AT&T Laboratories

c) Qualcomm

d) NTT

Question

How is bandwidth increased in Cdma2000?

a) Clubbing adjacent radio channels

b) Changing the hardware of base stations

c) Change of spectrum

d) Change of RF equipment

Question

What are the two options provided by Cdma2000 1xEV?

- a) Cdma2000 1xRTT, Cdma2000 3xRTT
- b) Cdma2000 1xEV-DO, Cdma2000 1xEV-DV**
- c) Cdma2000 1xEV-DT, Cdma2000 1xEV-DO
- d) Cdma2000 1xRTT, Cdma2000 1xEV-DV

Question

Which of the following is not backward compatible with Cdma2000?

- a) Cdma2000 1xRTT
- b) Cdma2000 3xRTT
- c) Cdma2000 1xEV-DO**
- d) Cdma2000 1xEV-DT