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MOBILE COMPUTING QUESTIONS (OBJECTIVE TYPE)

- 1) The modulation technique used for mobile communication systems during World War II was
- a. Amplitude modulation
- b. Frequency modulation
- c. ASK
- d. FSK

ANSWER: Frequency modulation

- 2) introduced Frequency Modulation for mobile communication systems in 1935.
- a. Edwin Armstrong
- b. Albert Einstein
- c. Galileo Galilei
- d. David Bohm

ANSWER: Edwin Armstrong

- a. Simplex mode
 b. Half duplex mode
 c. Full duplex mode
 d. None of the above

 ANSWER: Half duplex mode

- 4) DECT stands for
- a. Digital European Cell
- b. Digitized Emergency Cellular Telephone
- c. Digital European Cordless Telephone
- d. Digital European Cellular Telephone

ANSWER: Digital European Cordless Telephone

- 5) World's first cellular system was developed by
- a. Nippon Telephone and Telegraph (NTT)
- b. Bellcore and Motorola
- c. AT&T Bell Laboratories
- d. Oualcomm

ANSWER: Nippon Telephone and Telegraph (NTT)

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- 6) Paging systems were based on
- a. Simplex systems
- b. Half duplex systems
- c. Full duplex systems
- d. None of the above

ANSWER: Simplex systems

- 7) Paging systems could be used to
- a. Send numeric messages

- Answer: Transmitter

 9) Carrier frequency of a TV remote solution is in the range

 1. of Infra red
 1. < 100 MHz
 1. GHz
 2. GHz
 3WER: of Infra red
 Half duplex svs*

 m'

- a. Communication in single direction
- b. Communication in single direction at a time
- c. Communication in both directions at the same time
- d. None of the above

ANSWER: Communication in single direction at a time

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11) MIN stands for

- a. Mobile Identification Number
- b. Mobile Internet
- c. Mobility In Network
- d. None of the above

ANSWER: Mobile Identification Number

- 12) The process of transferring a mobile station from one base station to another is
- a. MSC

Answer: All of the above

14) IMT-2000 is a digital mobile system that functions as

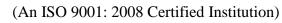
1. Pager
Cordless
Low earth orbit satellites
All of the above

SWER: All of the above

The 2G celluly

- a. TDMA/FDD
- b. CDMA/FDD
- c. Digital modulation formats
- d. All of the above

ANSWER: All of the above



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16) NADC is a 2G standard for

- a. TDMA
- b. CDMA
- c. Both a & b
- d. None of the above

ANSWER: TDMA

- 17) 2G CDMA standard cdma one supports up to
- a. 8 users

- a. UMTS
- b. DECT
- c. DCS-1800
- d. ETACS

ANSWER: UMTS





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21)	Commonly	y used	mode	for 3G	networks is
-----	----------	--------	------	--------	-------------

- a. TDMA
- b. FDMA
- c. TDD
- d. FDD

ANSWER: FDD

- 22) The minimum spectrum allocation required for W-CDMA is
- a. 5MHz
- b. 2MHz
- c. 500KHz
- d. 100KHz

ANSWER: 5MHz

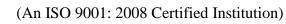
- 23) CDMA2000 1xEV provides high speed data access with channel allocation of

a. 5, 7 b. 7, 5 c. 2, 5 . 5, 2 milliseconds and the frame is divided into _____ time slots.

ANSWER: 5, 7

- 25) The interference between the neighboring base stations is avoided by
- a. Assigning different group of channels
- b. Using transmitters with different power level
- c. Using different antennas
- d. All of the above

ANSWER: Assigning different group of channels



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- 26) Radio capacity may be increased in cellular concept by
- a. Increase in radio spectrum
- b. Increasing the number of base stations & reusing the channels
- c. Both a & b
- d. None of the above

ANSWER: Increasing the number of base stations & reusing the channels

- 27) The shape of the cellular region for maximum radio coverage is
- a. Circular
- b. Square
- c. Oval
- d. Hexagon

ANSWER: Hexagon

a. It uses the maximum area for coverage
b. Fewer number of cells are required
c. It approximates circular radiation pattern
d. All of the above

ANSWER: All of the above

29) Centre excited hexagonal cells use

- a. Sectored directional antennas
- b. Omni directional antennas
- c. Yagi uda antennas
- d. None of the above

ANSWER: Omni directional antennas

- 30) Spectrum Efficiency of a cellular network is
- a. The traffic carried by whole network
- b. The traffic carried per cell divided by the bandwidth of the system and the area of a cell
- c. Expressed in Erlang /MHz /km2
- d. Both b and c
- e. Both a and c

ANSWER: Both b and c

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- 31) The advantage of using frequency reuse is
- a. Increased capacity
- b. Limited spectrum is required
- c. Same spectrum may be allocated to other network
- d. All of the above

ANSWER: All of the above

- 32) The strategies acquired for channel assignment are
- a. Fixed
- b. Dynamic
- c. Regular
- d. Both a and b
- e. Both b and c

ANSWER: Both a and b

- 33) In a fixed channel assignment strategy, if all the assigned channels are occupied, the call
- a. Gets transferred to another cell
- b. Gets blocked
- c. Is kept on waiting
- d. All of the above

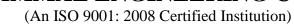
ANSWER: Gets blocked

- 34) In a fixed channel assignment strategy
- a. Each cell is assigned a preder in med set of frequencies
- b. The call is served by antise clannels of the cell
- c. The call gets blocked if all the channels of the cell are occupied
- d. All of the above

ANSWER: All of the above

- 35) In a dynamic channel assignment strategy,
- a. Voice channels are not permanently assigned
- b. The serving base station requests for a channel from MSC
- c. MSC allocates the channel according to the predetermined algorithm
- d. All of the above

ANSWER: All of the above



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36) Advantage of using Dynamic channel assignment is

- a. Blocking is reduced
- b. Capacity of the system is increased
- c. Both a & b
- d. None of the above

ANSWER: Both a & b

- 37) Disadvantage of using Dynamic channel assignment is
- a. More storage required
- b. Calculations and analysis is increased
- c. Both a & b
- d. None of the above

ANSWER: Both a & b

- 38) In Dynamic channel assignment, any channel which is being used in one cell can be reassigned simultaneously to another cell in the system at a reasonable distance.
- a. True
- b. False

ANSWER: True

- 39) In Handoff
- a. Process of transferring the call to the w base station
- b. Transfers the call
- c. New channel allocation is **(6)**
- d. All of the above

ANSWER: All of the abo

- 40) Delay in handoffs is caused due to
- a. Week signal conditions
- b. High traffic conditions
- c. Un availability of the channel
- d. All of the above

ANSWER: All of the above

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- 41) Inter system Handoffs are done
- a. When mobile station moves in two cellular systems with different MSC
- b. When mobile station moves between two cellular systems
- c. When mobile station receives more power from other base station than the serving base station
- d. All of the above

ANSWER: All of the above

- 42) When a fraction of assigned channel is reserved for handoffs, it is
- a. Guard channel concept
- b. Fixed channel assignment
- c. Dynamic channel assignment
- d. None of the above

ANSWER: Guard channel concept

43) While handoffs, the termination of call may be avoided by attment

- a. Providing Guard channel
- b. Queuing of handoffs
- c. Both a & b
- d. None of the above

ANSWER: Both a & b

- 44) Dwell time is the time for
- a. A call within the cell
- b. Hand off
- c. Waiting for channel
- d. None of the above

ANSWER: A call within the cell

- 45) Dwell time depends upon
- a. Interference
- b. Distance between the subscriber and the base station
- c. Propagation of call
- d. All of the above

ANSWER: All of the above

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- 46) In Mobile Assisted Handoff (MAHO), the handoff takes place when
- a. The power received by the mobile station from other base station is more than the serving base station
- b. The channel allocated is not available
- c. The mobile station has no signal
- d. All of the above

ANSWER: The power received by the mobile station from other base station is more than the serving base station

- 47) Mobile Assisted Handoff (MAHO) provides
- a. Faster handoffs
- b. Suitability for frequent handoffs
- c. MSC need not monitor the signal strength
- d. All of the above

ANSWER: All of the above

- 48) Trunking in a cellular network refers to
- a. Termination of a call
- b. Spectrum unavailability
- c. Accommodating large number of users in limited pectrum
- d. All of the above

ANSWER: Accommodating large number of users in limited spectrum

- 49) When all of the radio channels are in a trunking system
- a. The user is blocked
- b. The access to the system is defied
- c. The queue may be privided
- d. All of the above

ANSWER: All of the above

- 50) Umbrella cell approach
- a. Uses large and small cells
- b. Uses different antenna heights
- c. Is used for high speed users with large coverage area and low speed users with small coverage area
- d. All of the above

ANSWER: All of the above

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- 51) Interference in cellular systems is caused by
- a. Two base stations operating in same frequency band
- b. Two calls in progress in nearby mobile stations
- c. Leakage of energy signals by non cellular systems into cellular frequency band
- d. All of the above

ANSWER: All of the above

- 52) Interference in frequency bands may lead to
- a. Cross talk
- b. Missed calls

- a. Radius of the cell
 b. Distance between the centers of the co channel cells
 c. Frequency allocation of nearest cells
 d. Both a and b
 e. Both b and c

 NSWER: Both a and b

 l) Increase in Co- channel reuse ratio adjace.

 Better transmission one in the arger capacital arger capacital communication.

- b. Larger capacity
- c. Low co-channel inte
- d. Both a and c
- e. Both a and b

ANSWER: Both a and c

- 55) Grade of service refers to
- a. Accommodating large number of users in limited spectrum
- b. Ability of a user to access trunked system during busy hour
- c. Two calls in progress in nearby mobile stations
- d. High speed users with large coverage area

ANSWER: Ability of a user to access trunked system during busy hour

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- 56) Traffic intensity is expressed in
- a. Erlangs /MHz /km2
- b. Erlangs
- c. λ / sec
- d. dB/sec

ANSWER: Erlangs

- 57) The techniques used to improve the capacity of cellular systems are
- a. Splitting
- b. Sectoring
- c. Coverage zone approach
- d. All of the above

ANSWER: All of the above

- ers 58) Distributed antenna systems are used at
- a. Transmitters of mobile systems
- b. Transmitters of base stations
- c. Inputs and outputs of repeaters
- d. Receivers of mobile stations

ANSWER: Inputs and outputs of repeaters

- 59) Antenna down tilting refers to
- a. Focusing radio energy towards
- b. Decreasing the strength of
- c. Decreasing the S/N rat enna input
- d. All of the above

ANSWER: Focusing radio energy towards ground

- 60) Diffraction, at high frequencies, depends upon
- 1. Geometry of the object
- 2. Polarization of the incident wave
- 3. Amplitude of the incident wave
- 4. Frequency of the incident wave

a. 1 and 2 are correct

b. 1, 2 and 3 are correct

c. 2 and 3 are correct

d. All are correct

ANSWER: 1, 2 and 3 are correct

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- 61) The rainbow pattern seen on a CD is an example of
- a. Reflection
- b. Refraction
- c. Diffraction
- d. None of the above

ANSWER: Diffraction

- 62) Fresnel Reflection Coefficient is a factor of
- 1. Polarization of the wave
- 2. Properties of the material at which reflection occurs
- 3. Angle of incidence of wave
- a. 1 and 2 are correct
- b. 1 and 3 are correct
- c. All the three are correct
- d. 2 and 3 are correct

ANSWER: All the three are correct

- 63) When a wave falls on a perfect conductor
- a. Wave is partially reflected and partially transmitted
- b. All incident energy is reflected back with ut loss of energy
- c. Part of energy gets absorbed
- d. Both a and c

ANSWER: All incident energy is resected back without loss of energy

- 64) Brewster angle is the rule at which
- a. No reflection occurs at the first medium
- b. Reflection coefficient is zero
- c. The wave gets refracted in the direction of source
- d. Both a and b
- e. Both a and c

ANSWER: Both a and b

- 65) Fading is caused due to
- 1. Multi path propagation
- 2. Obstacles
- 3. Frequency variations at the source
- 4. Variation in amplitude and phase at receiver

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- a. 1 and 2 are correct
- b. 1, 2 and 4 are correct
- c. 2 and 3 are correct
- d. All are correct

ANSWER: 1, 2 and 4 are correct

- 66) Coherence time refers to
- a. Time required to attain a call with the busy base station
- b. Time required for synchronization between the transmitter and the receiver
- c. Minimum time for change in magnitude and phase of the channel
- d. None of the above

ANSWER: Minimum time for change in magnitude and phase of the channel

- 67) Fading due to shadowing is
- a. Fading due to large obstructions
- b. Large coherence time of the channel as compared to the delay constraints
- c. Small coherence time of the channel as compared to the delay constraints
- d. Both a and b
- e. Both a and c

ANSWER: Both a and b

- 68) Deep fade is
- 1. Strong destructive interference
- 2. Drop in signal to noise ratio
- 3. Temporary failure of me. sage transfer
- a. 1 and 2 are correct

b. 1 and 3 are correct

c. 2 and 3 are correct

d. All are correct

ANSWER: All are correct

- 69) Doppler spread refers to
- a. Signal fading due to Doppler shift in the channel
- b. Temporary failure of message transfer
- c. Large coherence time of the channel as compared to the delay constraints
- d. All of the above

ANSWER: Signal fading due to Doppler shift in the channel

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70) Friis free space equation

- 1. Is an expression for noise power
- 2. Is a function of transmitting and receiving antenna gain
- 3. Depends upon the distance between transmitting and receiving antenna
- a. 1 and 2 are correct
- b. 1 and 3 are correct
- c. 2 and 3 are correct
- d. All are correct

ANSWER: 2 and 3 are correct

- 1. Unobstructed line of sight between the transmitter and receiver
 2. Satellite communication systems and Microwave line of sight radio links
 3. Propagation along the ground surface
 a. 1 and 2 are communication.
- a. 1 and 2 are correct
- b. 1 and 3 are correct
- c. 2 and 3 are correct
- d. All the three are correct

ANSWER: 1 and 2 are correct

- 72) According to Friis free space equ
- 1. Received power falls with square distance between the transmitter and receiver
- 2. Increases with square of the d between the transmitter and receiver
- 3. Received power increases ins of transmitting and receiving antennas
- a. 1 and 2 are correct

b. 1 and 3 are correct

c. All the three are correct

d. 2 and 3 are correct

ANSWER: All the three are correct

- 73) EIRP is
- 1. Effective Isotropic Radiated Power
- 2. Maximum radiated power available by the transmitter
- 3. A factor of power and gain of transmitter

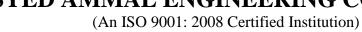
a. 1 and 2 are correct

b. 1 and 3 are correct

c. All the three are correct

d. 2 and 3 are correct

ANSWER: All the three are correct



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74) Spread spectrum modulation involves

- 1. PN sequence for modulation
- 2. Large bandwidth
- 3. Multiple users
- a. 1 and 2 are correct
- b. 1 and 3 are correct
- c. 2 and 3 are correct
- d. All the three are correct

ANSWER: All the three are correct

- 75) PN sequence at the decoder acts as a locally generated carrier at the receiver and decodes the signal using
- a. Correlator
- b. Adder
- c. Frequency divider
- d. PLL

ANSWER: Correlator

- 76) In spread spectrum technique, the multiple u exare assigned with
- a. Same spectrum and same PN code
- b. Same spectrum and different PN code
- c. Different spectrum and different PN code
- d. Different spectrum and same PN eque

ANSWER: Same spectrum and liferent PN code

- 77) Advantage of using Spread Spectrum modulation is/are
- 1. Interference rejection capability
- 2. Frequency planning is not required
- 3. Resistance to multipath fading
- 4. ISI is lesser
- a. 1 and 2 are correct
- b. 1, 2 and 3 are correct
- c. 2 and 3 are correct
- d. All the four are correct

ANSWER: All the four are correct

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78) Direct sequence spread spectrum demodulation uses

- a. DPSK
- b. FSK
- c. ASK
- d. QPSK

ANSWER: DPSK

- 79) Fast hopping is
- a. More than one frequency hop during each symbol
- b. Hopping rate greater than or equal to information symbol rate
- c. One or more symbols transmitted between frequency hops
- d. Both a and b
- e. Both b and c

ANSWER: Both a and b

- 80) Slow frequency hopping refers to
- a. One or more symbols transmitted in time interval between frequency hops
- b. More than one frequency hop during each symbol
- c. Hopping rate greater than or equal to information symbol rate
- d. Both a and c are correct

ANSWER: One or more symbols transmitted in time interval between frequency hops

- 81) Probability of outage refers to
- a. Noise developed at the rec
- b. Number of bit errors aut a transmission
- c. Signal to noise ratio
- d. All of the above

ANSWER: Number of bit errors during transmission

- 82) The digital modulation technique used in frequency selective channels is
- a. FSK
- b. ASK
- c. BPSK
- d. QPSK

ANSWER: BPSK

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83) Working of Adaptive Equalizers include

- a. Training
- b. Tracking
- c. Modulation
- d. Both a and b
- e. All a, b and c are correct

ANSWER: Both a and b

- 84) The time span for which the equalizer converges depends upon

- a. FIR filter

 1. Lattice filter

 1. Low pass filter

 Both a and b

 Both a and c

 SWER: Both a and

 Linear equalizer

 Proceedings of the content of the cont

- a. Transversal filter
- b. Lattice filter
- c. Low pass filter
- d. None of the above

ANSWER: Transversal filter

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- 87) The methods used for non linear equalization are
- a. Decision Feedback Equalization
- b. Maximum Likelihood Symbol Detection
- c. Maximum Likelihood Sequence Estimation

a. 1 and 2 are correct

b. 1, 2 and 3 are correct

c. 2 and 3 are correct

d. None of the above

ANSWER: 1, 2 and 3 are correct

- 88) The performance of algorithms for Adaptive Equalization are given by
- 1. Rate of convergence
- 2. Computational complexity
- 3. Numerical properties
- 4. Frequency change
- a. 1 and 2 are correct
- b. 1, 2 and 3 are correct
- c. 2 and 3 are correct
- d. All are correct

ANSWER: 1, 2 and 3 are correct

- 89) Computational complexity of an algorithm refers to the
- a. Number of operations for one iteration of algorithm
- b. Inaccuracies in the mathematical analysis
- c. Noise produced during one complete iteration of algorithm
- d. All of the above

ANSWER: Number of pera ions for one iteration of algorithm

- 90) The algorithms acquired for adaptive equalization are
- 1. Zero forcing algorithm
- 2. Least mean squares algorithm
- 3. Recursive least squares algorithm
- a. 1 and 2 are correct
- b. 1, 2 and 3 are correct
- c. 2 and 3 are correct
- d. None of the above

ANSWER: 1, 2 and 3 are correct

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91) Fractionally spaced equalizer acts as

a. Matched filter

b. Equalizer

c. Demodulator

d. Both a and b

e. All a, b and c are correct

ANSWER: Both a and b

92) Diversity employs the decision making at

a. Transmitter

b. Receiver

c. Transmitter and receiver

d. Communication channel

ANSWER: Receiver

93) The diversity schemes are based on

1. Time diversity

- 2. Frequency diversity
- 3. Space diversity
- 4. Polarization diversity

a. 1 and 2 are correct

c. 2 and 3 are correct

b. 1, V and 3 are correct

ANSWER: All the four are correct

94) In time diversity

a. Multiple versions of signals are transmitted at different time instants

b. The signal is transmitted unit in altiple channels

c. Signal is transmitted and different polarization

d. All of the above

ANSWER: Multiple versions of signals are transmitted at different time instants

95) RAKE receiver is

1. Several sub receivers

- 2. Several correlators
- 3. Fingers
- 4. Equalization based

a. 1 and 2 are correct

b. 1, 2 and 3 are correct

c. 2 and 3 are correct

d. All the four are correct

ANSWER: 1, 2 and 3 are correct

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96) The RAKE receiver involves the steps

- a. Correlator, estimation of transmitted signal, demodulation, bit decision
- b. Estimation of transmitted signal, correlator, demodulation, bit decision
- c. Estimation of transmitted signal, demodulation, correlator, bit decision
- d. Estimation of transmitted signal, demodulation, bit decision, correlator

ANSWER: Correlator, estimation of transmitted signal, demodulation, bit decision

- 97) Search window of a RAKE receiver is
- a. Frequency band of the channel
- b. Range of the time delays
- c. Range of noise
- d. All of the above

ANSWER: Range of the time delays

98) Speech Coders are categorized on the basis of

a. Signal compression techniques

- b. Frequency of signal
- c. Bandwidth of the signal
- d. All of the above

ANSWER: Signal compression techniques

- 99) Waveform coders and Vocoders are the types of
- a. Speech coders
- b. Modulation technique
- c. Frequency translation and
- d. Channel allocation for transmission

ANSWER: Speech coders

100) PCM, DPCM, DM, ADPCM are the types of

- a. Vocoders
- b. Waveform coders
- c. Channel allocation for transmission
- d. All of the above

ANSWER: Waveform coders

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101) Speech coding technique that is independent of the source is

- a. Vocoders
- b. Waveform coders
- c. Both a & b
- d. None of the above

ANSWER: Waveform coders

102) Advantage of using waveform coders is

- 1. Independent of the signal source
- 2. Less complexity
- 3. Suitable for noisy environments
- a. 1 and 2 are correct
- b. 1 and 3 are correct
- c. 2 and 3 are correct
- d. All the three are correct

ANSWER: All the three are correct

103) The type of frequency domain coding that divides the speech signal into sub bands is
a. Waveform coding
b. Vocoders
c. Block transform coding
d. Sub-band coding

- d. Sub-band coding

ANSWER: Sub-band coding

104) The speech coding tec hat is dependent on the prior knowledge of the signal is

- a. Waveform coders
- b. Vocoders
- c. Sub band coding
- d. Block transform coding

ANSWER: Vocoders

105) The steps involved in Channel vocoders for speech transmission are

- a. Envelope detection, sampling, encoding, multiplexing
- b. Sampling, Envelope detection, encoding, multiplexing
- c. Envelope detection, encoding, sampling, multiplexing
- d. Sampling, Envelope detection, multiplexing, encoding

ANSWER: Envelope detection, sampling, encoding, multiplexing

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106) Vocal tract cepstral coefficients and excitation coefficients are separated by

- a. Samplers
- b. Linear filters
- c. Encoders
- d. Multiplexers

ANSWER: Linear filters

- 107) In voice excited vocoders, PCM transmission helps in transmission of
- a. High frequency bands of speech
- b. Low frequency bands of speech
- c. Multiplexed signals
- d. Modulated signals

ANSWER: Low frequency bands of speech

108) Linear predictive coders are based on the principle that

- 1. Current signal sample is obtained from linear combination of ast samples
- 2. Current signal sample is independent of past sample attme
- 3. These are time domain vocoders
- 4. They are among low bit rate vocoders
- a. 1, 3 and 4 are correct
- b. 2, 3 and 4 are correct
- c. 1 and 4 are correct
- d. All the four are correct

ANSWER: 1, 3 and 4 are con

- 109) Multi pulse excit C includes
- 1. Multiple pulses per period
- 2. Minimization of weighted mean square error
- 3. Better speech quality
- 4. Pitch detection is not required
- a. 1 and 4 are correct
- b. 1 and 3 are correct
- c. 2 and 4 are correct
- d. All four are correct

ANSWER: All four are correct

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110) In residual excited LPC,

- a. The residue of subtraction of generated and original signal is quantized at the transmitter
- b. Pitch detection is not required
- c. Multiple pulses per period
- d. Coder and decoders have predetermined set of codes

ANSWER: The residue of subtraction of generated and original signal is quantized at the transmitter

- 111) The speech sequence in GSM Codec consists of
- a. Pre emphasis, segmentation, windowing, filtering
- b. Windowing, Pre emphasis, segmentation, filtering
- c. Pre emphasis, windowing, segmentation, filtering
- d. Pre emphasis, segmentation, filtering, windowing

ANSWER: Pre emphasis, segmentation, windowing, filtering

112) The windowing technique used for speech coding in GSM Codec is

- a. Blackman window
- b. Welch window
- c. Cosine window
- d. Hamming window

ANSWER: Hamming window

113) The received signal at the GSM speech decoder is passed through

- a. STP filter
- b. LTP filter
- c. Quantizer
- d. PLL

ANSWER: LTP filter

114) In GSM Codec, the bits encoded for forward error correction are

- a. Ia bits
- b. Ib bits
- c. II bits
- d. Both a and b
- e. Both a and c

ANSWER: Both a and b

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- 115) The speech coders are selected on the basis of
- 1. Robustness to transmission errors
- 2. Cell size
- 3. Type of modulation technique used
- 4. Distance between the transmitter and receiver

a. 1 and 4 are correctc. 2 and 4 are correct

d. All four are correct

b. 1, 2 and 3 are correct

ANSWER: 1, 2 and 3 are correct

116) FDMA is the division of

a. Timeb. Phasec. Spectrumd. Amplitude

ANSWER: Spectrum

117) Guard band is

a. The small unused bandwidth between the frequency channels to avoid interference

- b. The bandwidth allotted to the signal
- c. The channel spectrum
- d. The spectrum acquired by the noise between the signal

ANSWER: The small unused bandwidth between the frequency channels to avoid interference

118) Cable television is an example of

a. TDMA

c. CDMA

b. FDMA

d. SDMA

ANSWER: FDMA

119) In FDMA,

- 1. Each user is assigned unique frequency slots
- 2. Demand assignment is possible
- 3. Fixed assignment is possible
- 4. It is vulnerable to timing problems

a. 1 and 2 are correct

b. 2 and 4 are correct

c. 1, 2 and 3 are correct

d. All four are correct

ANSWER: 1, 2 and 3 are correct

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120) FDMA demand assignment uses

- 1. Single channel per carrier
- 2. Multi channel per carrier
- 3. Single transmission in one time slot
- 4. Multi transmission in one time slot
- a. 1 and 2 are correct
- b. 2, 3 and 4 are correct
- c. 1, 2 and 3 are correct
- d. All four are correct

ANSWER: 1 and 2 are correct

- 121) The advantages of FDMA over TDMA includes
- 1. Division is simpler
- 2. Propagation delays are eliminated
- 3. Cheaper filters with less complicated logic functions
- 4. Linearity
- a. 1, 2 and 3 are correct
- b. 1 and 2 are correct
- c. 1 and 4 are correct
- d. All four are correct

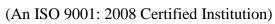
ANSWER: 1 and 2 are correct

- 122) TDMA is a multiple access technique that has
- a. Different users in different an e jots
- b. Each user is assigned and the fequency slots
- c. Each user is assigned a un que code sequence
- d. Each signal is modulate, with frequency modulation technique

ANSWER: Different users in different time slots

- 123) In TDMA, the user occupies the whole bandwidth during transmission
- a. True
- b. False

ANSWER: True



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124) TDMA allows the user to have

- a. Use of same frequency channel for same time slot
- b. Use of same frequency channel for different time slot
- c. Use of same time slot for different frequency channel
- d. Use of different time slot for different frequency channels

ANSWER: Use of same frequency channel for different time slot

- 125) GSM is an example of
- a. TDMA cellular systems
- b. FDMA cellular systems
- c. CDMA cellular systems
- d. SDMA cellular systems

ANSWER: TDMA cellular systems

126) TDMA is employed with a TDMA frame that has preamble. The preamble contains Address of artment

base station and subscribers

- 1. Synchronization information
- 2. Frequency allotted
- 3. Coded sequence
- a. 1 and 2 are correct
- b. 1, 2 and 3 are correct
- c. 2 and 4 are correct
- d. All four are correct

ANSWER: 1 and 2 are corre

127) CDMA is

- 1. Spread spectrum technology
- 2. Using same communication medium
- 3. Every user stays at a certain narrowband channel at a specific time period
- 4. Each user has unique PN code
- a. 1, 2 and 3 are correct
- b. 2 and 3 are correct
- c. 1, 2 and 4 are correct
- d. All four are correct.

ANSWER: 1, 2 and 4 are correct

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128) Global Positioning System uses

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

ANSWER: CDMA

- 129) CDMA is advantageous over other Spread Spectrum techniques for
- 1. The privacy due to unique codes
- 2. It rejects narrow band interference
- 3. Resistance to multi path fading
- 4. Its ability to frequency reuse
- a. 1, 2 and 3 are correct
- b. 2 and 3 are correct
- c. 1, 2 and 4 are correct
- d. All the four are correct

ANSWER: All the four are correct

- 130) The wide band usage in CDMA helps in
- 1. Increased immunity to interference
- 2. Increased immunity to jamming
- 3. Multiple user access
- 4. Different spectrum allocation in different time slots
- a. 1, 2 and 3 are correct
- c. 1, 2 and 4 are correc

- b. 2, 3 and 4 are correct
- d. All the four are correct

ANSWER: 1, 2 and 3 are correct

- 131) The advantages of using a CDMA technique over other spread spectrum techniques are
- 1. Increased capacity
- 2. Easier handoff
- 3. Better measure of security
- 4. Multiple users occupy different spectrum at a time

a. 1, 2 and 3 are correct

b. 2, 3 and 4 are correct

c. 1, 2 and 4 are correct

d. All the four are correct

ANSWER: 1, 2 and 3 are correct

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132) FHMA is

- 1. Spread spectrum technology
- 2. Using same communication medium
- 3. Every user has assigned unique frequency slot
- 4. Each user has unique PN code
- a. 1 and 2 are correct
- c. 2 and 4 are correct

b. 1, 2 and 4 are correct

d. All the four are correct

ANSWER: All the four are correct

- 133) OFDM is a technique of
- 1. Encoding digital data
- 2. Multiple carrier frequencies
- 3. Wide band digital communication
- 4. 4G mobile communication
- a. 1, 2 and 3 are correct
- c. 1, 2 and 4 are correct

e four are correct

ANSWER: All the four are correct

Killer 134) Advantages of using OFDM include

- 1. Avoids complex equalizers
- 2. Low symbol rate and guard interva
- 3. Avoids ISI
- 4. Multiple users at same freque

a. 1, 2 and 3 are correct

c. 1, 2 and 4 are correct

b. 2 and 3 are correct

d. All the four are correct

ANSWER: All the four are correct

135) The troubles that OFDM faces over other spread spectrum techniques are

- 1. Sensitivity to Doppler shift
- 2. Frequency synchronization problems
- 3. Time synchronization problems
- 4. Low efficiency due to guard intervals
- a. 1, 2 and 3 are correct
- c. 1, 2 and 4 are correct

- b. 2 and 3 are correct
- d. All the four are correct

ANSWER: 1, 2 and 4 are correct

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136) The guard interval is provided in OFDM

- a. To eliminate the need of pulse shaping filter
- b. To eliminate ISI
- c. High symbol rate
- d. Both a and b
- e. Both b and c

ANSWER: Both a and b

- 137) Packet radio refers to
- a. Multiple users on single channel
- b. Single user on multiple channels as per demand
- e Partiment of CSE. c. Multiple users on multiple channels at different time slots
- d. Multiple users with coding techniques

ANSWER: Multiple users on single channel

138) Disadvantages of packet radio are

- a. Induced delays
- b. Low spectral efficiency
- c. Large spectrum required
- d. Both a and b
- e. Both b and c

ANSWER: Both a and b

139) Pure ALOHA is a

- a. Random access proto
- b. Scheduled access pro
- c. Hybrid access protocol
- d. Demand access protocol

ANSWER: Random access protocol

- 140) The increase in number of users in PURE ALOHA causes
- a. Increase in delay
- b. Increase in probability of collision
- c. Increase in spectrum
- d. Both a and b
- e. Both a and c

ANSWER: Both a and b

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141) SDMA technique employs

- a. Smart antenna technology
- b. Use of spatial locations of mobile units within the cell
- c. More battery consumption
- d. Both a and b are correct
- e. Both b and c are correct

ANSWER: Both a and b are correct

- 142) The advantage of using SDMA over other spread spectrum technique is
- a. Mobile station battery consumption is low
- b. Reduced spectral efficiency
- c. Increased spectral efficiency
- d. Both a and b are correct
- e. Both a and c are correct

ANSWER: Both a and c are correct

- 143) The increased capacity of SDMA is due to a. Focused signal transmitted into narrow transmission beam b. Smart antennas pointing towards mobile at a contract of the con

- c. Use of different frequencies at same time s
- d. Both a and b are correct
- e. Both a and c are correct

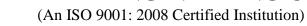
ANSWER: Both a and b are correct

- 144) Coherence time is
- a. Directly proportional to D ppler spread
- b. Indirectly proportional Doppler spread
- c. Directly proportional to square of Doppler spread
- d. Directly proportional to twice of Doppler spread

ANSWER: Directly proportional to Doppler spread

- 145) Types of small scale fading, based on Doppler spread are
- a. Fast fading
- b. Frequency non selective fading
- c. Flat fading
- d. Frequency selective fading

ANSWER: Fast fading



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- 146) Flat fading or frequency nonselective fading is a type of
- a. Multipath delay spread small scale fading
- b. Doppler spread small scale fading
- c. Both a & b
- d. None of the above

ANSWER: Multipath delay spread small scale fading

- 147) In Frequency Selective Fading, the
- a. Coherence Bandwidth of the channel is less than bandwidth of transmitted channel
- b. Coherence Bandwidth of the channel is more than bandwidth of transmitted channel
- c. Coherence Bandwidth of the channel is equal to bandwidth of transmitted
- d. None of the above

ANSWER: Coherence Bandwidth of the channel is less than bandwidth of transmitted channel

- 148) If coherence time of the channel is smaller than the symbol period of the transmitted signal, it is
- a. Fast fading
- b. Slow fading
- c. Frequency selective fading
- d. Frequency non selective fading

ANSWER: Fast fading

- nent 149) The power delay profile helps
- a. Excess delay
- b. rms delay spread
- c. Excess delay spread
- d. All of the above

ANSWER: All of the above

- 150) Coherence bandwidth is
- a. Channel that passes all spectral components with equal gain
- b. The bandwidth of modulated signal
- c. Channel that passes all spectral components with linear phase
- d. Both a and c
- e. Both a and b

ANSWER: Both a and c

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- 151) Small scale multipath propagation is caused due to waves with
- 1. Different propagation delays
- 2. Different amplitudes
- 3. Different phase
- a. 1 and 2 are correct
- b. 1 and 3 are correct
- c. 2 and 3 are correct
- d. All the three are correct

ANSWER: All the three are correct

- 152) The effects of small scale multipath propagation are
- 1. Changes in signal strength
- 2. Random frequency modulation
- 3. Time dispersion
- a. 1 and 2 are correct
- b. 1 and 3 are correct
- c. 2 and 3 are correct
- d. All the three are correct

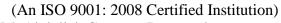
ANSWER: All the three are correct

- 153) Impulse response of a multipath change is determined by the fact that
- a. Mobile radio channel may be modeled as linear filter
- b. Impulse response is time varying
- c. Both a & b
- d. None of the above

ANSWER: Both a & b

- 154) The received signal from a multipath channel is expressed as
- a. Convolution of transmitted signal and impulse response
- b. Addition of transmitted signal and impulse response
- c. Subtraction of transmitted signal and impulse response
- d. All of the above
- e. None of the above

ANSWER: Convolution of transmitted signal and impulse response



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155) Direct RF pulse system helps in calculating

- a. Impulse response in frequency domain
- b. Impulse response in phase domain
- c. Power delay of the channel
- d. All of the above

ANSWER: Power delay of the channel

156) The techniques used for small scale multipath measurements are

1. Direct RF pulse system

2. Spread spectrum sliding correlator channel sounding

3. Frequency domain channel sounding

a. 1 and 2 are correct

b. 1 and 3 are correct

c. 2 and 3 are correct

d. All the three are correct

Oepartment of CSE ANSWER: All the three are correct