

# Unit 1

## Wireless and Mobile Communication

1. Which of the following modulation technique used for mobile communication systems during world war II was

- (A) Amplitude modulation
- (B) ASK
- (C) Frequency modulation
- (D) FSK

Answer

2. Full form of DECT.

- (A) Digital European Cellular Telephone
- (B) Digital European Cordless Telephone
- (C) Digital European Cordless Telex
- (D) None of these

Answer

3. World's first cellular system was developed by, which of the following?

- (A) Bellcore and Motorola
- (B) AT&T Bell Laboratories
- (C) Qualcomm
- (D) Nippon Telephone and Telegraph (NTT)

Answer

4. Who introduced Frequency Modulation for mobile communication systems in 1935?

- (A) David Bohm
- (B) Edwin Armstrong
- (C) Albert Einstein
- (D) None of these

Answer

5. Which of the following is false for characteristic of cellular telephone system?

- (A) Large geographic area
- (B) Large frequency spectrum
- (C) Limited frequency spectrum
- (D) None of the above

Answer

6. Shape of the cell present in the cellular system:-

- (A) Hexagonal
- (B) Circular
- (C) Triangular
- (D) None of the above

Answer

7. Full form of GSM.

- (A) Global System for Mobile
- (B) Global Supply for Mobile
- (C) Global System for Mobility
- (D) None of the above

Answer

8. Full form of PCS.

- (A) Personal Communications Source
- (B) Personal Communications Service
- (C) Present Communications Service
- (D) None of the above

Answer

9. PSTN stands for:-

- (A) Public Switched Telephone Node
- (B) Present Switched Telephone Network
- (C) Public Switched Telephone Network
- (D) None of the above

Answer

10. Mobile radio transmission system may classified as

- (A) Simplex
- (B) Half-duplex
- (C) Full-duplex
- (D) All of the above

Answer

11. \_\_\_\_\_ channel implies simultaneous bi-directional communication.

- (A) Simplex

- (B) Half-duplex
- (C) Full-duplex
- (D) None of the above

Answer

12. \_\_\_\_\_ implies bi-directions communication on a sharing basis one at a time.
- (A) Simplex
  - (B) Half-duplex
  - (C) Full-duplex
  - (D) None of the above

Answer

13. \_\_\_\_\_ channel implies one way communication.
- (A) Simplex
  - (B) Half-duplex
  - (C) Full-duplex
  - (D) None of the above

Answer

14. In wireless communication, the final form of transmission is always
- (A) Digital
  - (B) Analog
  - (C) Can't say
  - (D) None of the above

Answer

15. In general, channel coding aspects need more attention in \_\_\_\_\_ communication.
- (A) Wired
  - (B) Wireless
  - (C) Both (A) and (B)
  - (D) None of the above

Answer

16. In general, line coding aspects need more attention in \_\_\_\_\_ communication.
- (A) Wired
  - (B) Wireless
  - (C) Both (A) and (B)
  - (D) None of the above

Answer

17. Automatic gain control and power control are the important aspects of \_\_\_\_\_ and require closed-loop systems.

- (A) Receivers
- (B) Transceivers
- (C) Both (A) and (B)
- (D) None of the above

Answer

18. The communication systems mainly suitable for wireless communication:-

- (A) Analog input - analog transmission
- (B) Digital input - digital transmission
- (C) Digital input - analog transmission
- (D) Analog input - analog transmission

Answer

19. Voice signal is a \_\_\_\_\_ signal.

- (A) Continuous-time and analog
- (B) Random
- (C) Aperiodic and energy
- (D) All of the above

Answer

20. For the class of periodic signals, decomposition in sinusoidal components is called a \_\_\_\_\_, whereas for the class of finite energy signal (aperiodic), it is called a \_\_\_\_\_.

- (A) Fourier series, Fourier transform
- (B) Fourier transform, Fourier series
- (C) Fourier series, Fourier series
- (D) Fourier transform, Fourier transform

Answer

21. Ramp signal can not be:-

- (A) Energy signal
- (B) Power signal
- (C) Both
- (D) None of the above

Answer

22. The protocol for a Wi-fi system is:-

- (A) IEEE 802.1a
- (B) IEEE 802.100a

- (C) IEEE 802.11a
- (D) IEEE 802.20a

Answer

23. Which of the following is false for characteristic of cellular telephone system?

- (A) Limited frequency spectrum
- (B) Small frequency spectrum
- (C) Large frequency spectrum
- (D) Accommodate a large number of users

Answer

24. For initiating mobile calls, which of the following channels are responsible:-

- (A) FCC and RCC
- (B) FCC and RVC
- (C) FVC and FCC
- (D) All of these

Answer

25. Which of the following antennas are used at the center of the cells for the system with hexagonal-shaped cells?

- (A) Sectored directional antennas
- (B) Omni-directional antennas
- (C) Both
- (D) None of these

Answer

26. The type of handoff used in CDMA is:-

- (A) Soft handoff
- (B) Hard handoff
- (C) Both
- (D) None of the above

Answer

27. Which of the following handoff procedure is used to avoid dropping of call during course of a call?

- (A) Hard handoff
- (B) Soft handoff
- (C) Inersystem handoff
- (D) None of the above

Answer

28. Which of the following is/are true for handoff?

- (A) When a mobile moves into a different cell while conversation in progress, the MSC automatically transfers the call from one cell to other cell without any interference
- (B) Handoff is also called handover

(C) In satellite communications, it is the process of transferring control from one earth station to another

(D) All of the above

Answer

29. Fading of the received radio signals in a mobile communication environment occurs because of, which of the following?

(A) Bi-path Propagation

(B) Multipath Propagation

(C) Direct Propagation

(D) None of these

Answer

30. Which form of multipath fading affects all the frequencies across a given channel either equally or almost equally?

(A) Flat fading

(B) Selective fading

(C) Both

(D) None of these

Answer

31. In flat fading, the coherence bandwidth of the channel is \_\_\_\_\_ than the bandwidth of the signal.

(A) Larger

(B) Smaller

Answer

32. In frequency-selective fading, the coherence bandwidth of the channel is \_\_\_\_\_ than the bandwidth of the signal.

(A) Larger

(B) Smaller

Answer

## UNIT 2

### Wireless and Mobile Communication

1. The distribution used for describing statistical time varying nature of received envelope of multipath component is:-

- (A) Levy distribution
- (B) Rayleigh distribution
- (C) Gaussian distribution
- (D) None of these

Answer

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2. The signal envelope under narrowband fading with uniform AOA is \_\_\_\_\_.

- (A) Ricean
- (B) Rayleigh
- (C) Nakagami
- (D) None of these

Answer

---

3. In which of the following distribution a LOS component exists?

- (A) Ricean
- (B) Nakagami
- (C) Both
- (D) None of these

Answer

---

4. Envelope of the sum of two quadrature Gaussian noise signal follows \_\_\_\_\_ distribution

- (A) Ricean
- (B) Rayleigh
- (C) Nakagami
- (D) None of these

Answer

---

5. Full form of BER.

- (A) Bit Error Rate

- (B) Bit Error Ratio
- (C) Bit Ease Rate
- (D) None of the above

Answer

---

6. On which of the following BER depends?

- (A) Modulation scheme
- (B) Type of fading
- (C) Antenna diversity
- (D) All of the above

Answer

---

7. For a signal with unity average signal power, the capacity of the channel depends upon

- (A) Modulation scheme
- (B) Symbol rate
- (C) Receiver sensitivity
- (D) All of the above

Answer

---

8. In a Rayleigh fading signal, mean and median differ by, which of the following?

- (A) 0.2 dB
- (B) 0.55 dB
- (C) 0.10 dB
- (D) None of the above

Answer

---

9. Which is the most appropriate multipath model for cellular transmission, where a dominant line of sight plus many weak reflections are present?

- (A) Ricean Fading
- (B) Rayleigh Fading
- (C) Nakagami Fading
- (D) None of these

Answer

---



10. Which of the following gives rise to statistics similar to that of Rayleigh pdf?

- (A) Ricean distribution with rice factor ( $k$ ) = 0
- (B) Ricean distribution with rice factor ( $k$ ) = 1
- (C) Nakagami-m distribution with  $m = 1/2$
- (D) All of the above

Answer

---

11. How does the rice factor ( $K$ ) change with a decrease in the power of line of sight component?

- (A) Decreases
- (B) Increases
- (C) Can not say
- (D) Remains unchanged

Answer

---

12. What is the rice factor ( $k$ ) for a channel with no line of sight component?

- (A) 0
- (B) 1
- (C) 2
- (D) 3

Answer

---

13. The envelope of a bandpass noise is:-

- (A) Rayleigh
- (B) Gaussian
- (C) Uniformly distributed
- (D) None of the above

Answer

---

14. Which of the reception problems given that is not due to multipath?

- (A) Rayleigh fading
- (B) Slow fading
- (C) Delayed spreading
- (D) All of the above

Answer

---

15. Full form of SCRM.

- (A) Stochastic Ratio Channel Model
- (B) Stochastic Radio Channel Model
- (C) Stochastic Radio Channel Modulation
- (D) None of the above

Answer

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16. Which of the following is false for a characteristic of flat fading?

- (A) Non linear phase response
- (B) Mobile radio channel has constant gain
- (C) Linear phase response
- (D) None of the above

Answer

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17. Flat fading channel is also called as:-

- (A) Wideband channel
- (B) Amplitude varying channel
- (C) Frequency varying channel
- (D) Phase varying channel

Answer

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## UNIT III

### Wireless and Mobile Communication

1. Which of the following transform used by cepstrum vocoder?

- (A) Wavelet transform
- (B) Inverse Fourier transform
- (C) Cosine transform
- (D) None of these

Answer

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2. State True or False: The transmission bandwidth of spread spectrum techniques is equal to the minimum required signal bandwidth.

- (A) True
- (B) False

Answer

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3. State True or False: Formant vocoders use large number of control signals.

- (A) True
- (B) False

Answer

---

4. Which of the following is the reason for 'spread spectrum technique is inefficient for a single user'?

- (A) Small transmission bandwidth
- (B) Large transmission bandwidth

- (C) Fixed transmission bandwidth
- (D) None of these

Answer

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5. Which of the following is often called the formant of the speech signal.

- (A) Pole frequency
- (B) Voice pitch
- (C) Pitch frequency
- (D) None of the above

Answer

---

6. Which of the following is false for a property of spread spectrum techniques?

- (A) Multiple user, multiple access interface
- (B) Interference rejection capability
- (C) Frequency planning elimination
- (D) Multipath fading

Answer

---

7. State True or False: Channel vocoders are the time domain vocoders.

- (A) True
- (B) False

Answer

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8. Which of the following is false for a characteristic of PN sequence?

- (A) Low cross-correlation between any two sequences
- (B) Non deterministic

- (C) Low correlation between shifted version of sequence
- (D) Nearly equal number of 0s and 1s

Answer

---

9. Speech signal can be categorised in:-

- (A) Active, passive
- (B) Voiced, unvoiced
- (C) Balanced, unbalanced
- (D) None of these

Answer

---

10. State True or False: PN sequence can be generated using sequential logic circuits.

- (A) True
- (B) False

Answer

---

11. Which of the following is not lies in a vocoding system?

- (A) Waveform coder
- (B) Linear predictive coder
- (C) Channel vocoder
- (D) Formant vocoder

Answer

---

12. The period of a PN sequence produced by a linear m stage shift register cannot exceed, how many symbols?

- (A)  $2^m - 1$
- (B)  $2m$

- (C)  $2 + m$
- (D) None of these

Answer

---

13. State True or False: Vocoders are simple than the waveform coders.

- (A) True
- (B) False

Answer

---

14. DSSS system spreads the baseband signal by multiplying the baseband pulses with a \_\_\_\_\_ sequence.

- (A) Pseudo ratio
- (B) Pseudo noise
- (C) Pseudo notion
- (D) None of the above

Answer

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15. Vocoders synthesize the voice at the \_\_\_\_\_.

- (A) Transmitter
- (B) Receiver
- (C) Channel
- (D) None of the above

Answer

---

16. Frequency hopping involves a \_\_\_\_\_ change of transmission frequency.

- (A) Periodic
- (B) Non-periodic

- (C) Both
- (D) None of the above

Answer

---

17. The set of possible carrier \_\_\_\_\_ in FHSS is called hopset.

- (A) Amplitudes
- (B) Frequencies
- (C) Both
- (D) None of the above

Answer

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18. The bandwidth of a channel used in the \_\_\_\_\_ is called the instantaneous bandwidth.

- (A) Hop
- (B) Chips
- (C) Symbols
- (D) Hopset

Answer

---

19. Full form of MCM.

- (A) Multi Code Modulation
- (B) Multi Carrier Mode
- (C) Multi Carrier Modulation
- (D) None of these

Answer

---

20. MCM is a technique for transmitting data by sending the data over multiple carriers which are normally \_\_\_\_\_ spaced.

- (A) Open
- (B) Close
- (C) Both
- (D) None of the above

Answer

---

21. The advantage of multicarrier modulation:-

- (A) Resilience to interference
- (B) Resilience to narrow band fading
- (C) Multipath effects
- (D) All of the above

Answer

---

22. Multicarrier modulation operates by dividing the data stream to be transmitted into a number of \_\_\_\_\_ data rate data streams.

- (A) Higher
- (B) Lower
- (C) Can not say
- (D) None of the above

Answer

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23. Forms of multicarrier modulation techniques:-

- (A) Orthogonal frequency division multiplexing, OFDM
- (B) Generalised Frequency Division Multiplexing, GFDM
- (C) Filter Bank Multi Carrier, FBMC
- (D) All of the above

Answer

---



24. The method in which the tail of one pulse smears into adjacent symbol interval is known as \_\_\_\_\_.

- (A) Interchannel interference
- (B) Interbit interference
- (C) Intersymbol interference
- (D) All of these

Answer

---

25. Intersymbol interference (ISI) leads to increased probability of the \_\_\_\_\_ for making an error in detecting the symbols.

- (A) Transceiver
- (B) Receiver
- (C) Both
- (D) None of these

Answer

---

26. State True or False: Diversity requires a training sequence

- (A) True
- (B) False

Answer

---

27. \_\_\_\_\_ was the first to solve the problem of Intersymbol interference (ISI)

- (A) Nyquist
- (B) Faraday
- (C) Graham Bell
- (D) None of the above

Answer

---

28. Full form of MIMO.

- (A) Major input multiple output
- (B) Multiple input multiple output
- (C) Minor input minor output
- (D) Major input minor output

Answer

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29. State True or False: MIMO is a smart antenna technology.

- (A) True
- (B) False

Answer

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30. The methods used for non linear equalization are:-

- (A) Decision Feedback Equalization
- (B) Maximum Likelihood Sequence Estimation
- (C) Maximum Likelihood Symbol Detection
- (D) All of these

Answer

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31. The performance of algorithms for Adaptive Equalization are given by:-

- (A) Rate of convergence
- (B) Computational complexity
- (C) Numerical properties
- (D) All of the above

Answer

---

32. The algorithms acquired for adaptive equalization are:-

Principle of energy conservation:-

- (A) Zero forcing algorithm
- (B) Least mean squares algorithm
- (C) Recursive least squares algorithm
- (D) All of the above

Answer

---

#### UNIT 4

1. Multiplexing \_\_\_\_\_ the number of communication channels for transmission.

- (A) Decreases
- (B) Increases
- (C) Both
- (D) None of these

Answer

--

2. Which of the following type of multiplexing is widely used in cellphones?

- (A) Frequency division multiplexing
- (B) Code division multiplexing
- (C) Time division multiplexing
- (D) All of the above

Answer

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3. The systems in which the multiplexing is not necessary?

- (A) Satellites
- (B) Continuous wave transmission

- (C) TV broadcasting
- (D) Telemetry

Answer

--

4. Full form of FDMA.

- (A) Frequency Division Multiple Access
- (B) Frequency Domain Multiple Access
- (C) Frequency Division Mode Access
- (D) Frequency Division Multiple Act

Answer

--

5. Basic forms of multiple access techniques applied to wireless communications is/are:-

- (A) Frequency Division Multiple Access, FDMA
- (B) Time Division Multiple Access, (TDMA)
- (C) Spread Spectrum Multiple Access, (SSMA)
- (D) Spatial Division Multiple Access, (SDMA)
- (E) All of the above

Answer

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6. Full form of TDMA.

- (A) Time Division Multiple Access
- (B) Time Division Mode Access
- (C) Time Division Multiple Act
- (D) Time Division Modulation Access

Answer

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7. Full form of SDMA.

- (A) Spread Spectrum Multiple Act
- (B) Spread Spectrum Multiple Access
- (C) Spread Spectrum Mode Access
- (D) None of the above

Answer

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8. The difference between the carrier frequencies of the forward channels and reverse channels is an important parameter related to, which of the following technique?

- (A) CDMA
- (B) FDMA
- (C) SSMA
- (D) TDMA

Answer

--

9. Fiber optic FDMA is called as:-

- (A) Wavelength Division Multiple Access, (WDMA)
- (B) Wavelength Division Multiplexing, (WDM)
- (C) Both
- (D) None of these

Answer

--

10. The most critical feature of TDMA is:-

- (A) Assignment of time slots among multiple subscribers
- (B) Time synchronization to the incoming TDMA frame
- (C) Providing different access rates to subscribers
- (D) Dividing the carrier channel bandwidth into time slots

Answer

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11. Throughput of slotted ALOHA protocol is \_\_\_\_\_ for wireless data applications.

- (A) Very low
- (B) Very high
- (C) Low
- (D) High

Answer

--

12. Full form of ALOHA.

- (A) Additive Links On-line Hawaii Area
- (B) Additive Links Off-line Hawaii Area
- (C) Additive Links On-line Hawaii Act
- (D) None of these

Answer

--

13. Throughput of a pure ALOHA system is given by

- (A)  $\lambda e^{-2\lambda T}$
- (B)  $\lambda e^{2\lambda T}$
- (C)  $(1/\lambda)e^{-2\lambda T}$
- (D)  $(1/\lambda)e^{2\lambda T}$

Answer

--

14. The \_\_\_\_\_ techniques are suitable for bursty type traffic in the forms of packet.

- (A) FHMA
- (B) PRMA
- (C) TDMA
- (D) None of the above

Answer

--

15. To mitigate the inter-symbol interference problem in TDMA systems technique has to be provided, which of the following?

- (A) Channel coding
- (B) Channel equalisation
- (C) Source coding
- (D) None of the above

Answer

--

16. Which of the following multiple access technique is used for bursty long messages and small number of subscribers?

- (A) Pure ALOHA
- (B) Slotted ALOHA
- (C) Reservation ALOHA
- (D) PRMA

Answer

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17. Frequency division multiple access (FDMA) assigns \_\_\_\_\_ to \_\_\_\_\_.

- (A) Individual channels, individual users
- (B) Many channels, many users
- (C) Many channels, individual users
- (D) None of the above

Answer

--

18. The bandwidth of FDMA channel is:-

- (A) Zero
- (B) Wide

- (C) Large
- (D) Narrow

Answer

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## UNIT V

1. The GSM architecture consists of
- (A) Mobile Station, (MS)
  - (B) Base Station Subsystem (BSS)
  - (C) Network and Switching Subsystems
  - (D) All of the above

Answer

--

2. GSM uses \_\_\_\_\_ 25 MHz frequency band.
- (A) 1
  - (B) 2
  - (C) 3
  - (D) 4

Answer

--

3. GSM uses Frequency Division Duplexing (FDD) and a combination of \_\_\_\_\_ techniques to provide simultaneous access to multiple mobile subscribers unit.
- (A) CDMA and FDMA
  - (B) TDMA and FDMA
  - (C) OFDMA and FDMA
  - (D) IDMA and FDMA

Answer

--



4. Full form of SIM.

- (A) Subscriber Identity Module
- (B) Subscriber Identification Module
- (C) Both
- (D) None of the above

Answer

--

5. Switching subsystems consists of:-

- (A) Mobile switch centre
- (B) Home location register
- (C) Visitor location register
- (D) Authentication centre
- (E) All of the above

Answer

--

6. CDMA 2000-1XRTT system supports a typical throughput of upto \_\_\_\_ mobile per users.

- (A) 144 kbps
- (B) 500 kbps
- (C) 10 kbps
- (D) 1000 kbps

Answer

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7. The type of handovers supported by LTE is

- (A) Hard, soft and softest handover
- (B) Hard handover only
- (C) Soft handover only
- (D) None of the above

Answer

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8. Name the organization is responsible for developing LTE standards.

- (A) ISO
- (B) 3GPP
- (C) UMTS
- (D) 3GPP2

Answer

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9. The largest channel bandwidth a UE is required to support in LTE

- (A) 10 MHz
- (B) 1 MHz
- (C) 20 MHz
- (D) None of these

Answer

--

10. How often can resources be allocated to the UE?

- (A) Every slot
- (B) Every symbol
- (C) Every subframe
- (D) Every frame

Answer

--

11. Which of the following is/are true regarding Li-Fi technology?

- (i) It does not work under water unlike current radio frequency communication.
- (ii) It cannot pass through walls.

- (A) Only (i)
- (B) Only (ii)

- (C) Both (i) and (ii)
- (D) None of the above

Answer

--

12. Full form of Li-Fi.

- (A) Light Fidelity
- (B) Light Fit
- (C) Light Fiber
- (D) None of these

Answer

--

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

- (A) Suitable cell
- (B) Barred cell
- (C) Acceptance cell
- (D) Reserved cell

Answer

--

14. The average uploading speed of 4G LTE network is:-

- (A) 1-3 Mbps
- (B) 2-5 Mbps
- (C) 1-3 Gbps
- (D) 2-5 Gbps

Answer

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# Complete Syllabus

## Wireless and Mobile Communication

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

3) The early FM push-to-talk telephone systems were used in

- 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 Cellular Telex

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.

Qualcomm

ANSWER: Nippon Telephone and Telegraph (NTT)

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

b.

Send alphanumeric messages

c.

Voice message

d.

All of the above

ANSWER: All of the above

8) Garage door opener is a

a.

Transmitter

b.

Receiver

c.

Transceiver

d.

None of the above

ANSWER: Transmitter

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

a.

of Infra red

b.

< 100 MHz

c.

< 1 GHz

d.

< 2 GHz

ANSWER: of Infra red

10) Half duplex system for communication has

a.

Communication in single direction

b.

Communication in single direction at a time

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

b.

Roamer

c.

Hand off

d.

Forward channel

ANSWER: Hand off

13) PCN is

a.

Wireless concept of making calls

b.

For receiving calls

c.

Irrespective of the location of the user

d.

All of the above

ANSWER: All of the above

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

a.

Pager

b.

Cordless

c.

Low earth orbit satellites

d.

All of the above

ANSWER: All of the above

15) The 2G cellular network uses

a.

TDMA/FDD

b.

CDMA/FDD

c.

Digital modulation formats

d.

All of the above

ANSWER: All of the above

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

b.

64 users

c.

32 users

d.

116 users

ANSWER: 64 users

18) 2G standards support

7/1/2021 Multiple Choice Questions and Answers on Mobile Communication

<https://electronicspost.com/multiple-choice-questions-and-answers-on-mobile-communication/> 6/50

a.

Limited internet browsing

b.

Short Messaging Service

c.

Both a & b

d.

None of the above

ANSWER: Both a & b

19) The 2G GSM technology uses a carrier separation of

a.  
1.25 MHz

b.  
200 KHz

c.  
30 KHz

d.  
300 KHz

ANSWER: 200 KHz

20) 3G W-CDMA is also known as

a.  
UMTS

b.  
DECT

c.  
DCS-1800

d.  
ETACS

ANSWER: UMTS

21) Commonly 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 MHz

b.

50 MHz

c.

1.25 MHz

d.

4 MHz

ANSWER: 1.25 MHz

24) In TD-SDMA, there is a frame of \_\_\_\_\_ milliseconds and the frame is divided into \_\_\_\_\_ time slots.

a.

5, 7

b.

7, 5

c.

2, 5

d.

5, 2

ANSWER: 5, 7

25) The interference between the neighboring basestations 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

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

Ads by

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ANSWER: Hexagon

28) Hexagon shape is used for radio coverage for a cellbecause

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 band width of the system and the area of a cell

c.

Expressed in Erlang /MHz /km

2

d.

Both b and c

e.

Both a and c

ANSWER: Both b and c

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 predetermined set of frequencies

b.

The call is served by unused channels 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

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 new base station

b.

Transfers the call

c.

New channel allocation is done

d.

All of the above

ANSWER: All of the above

40) Delay in handoffs is caused due to

a.

Weak signal conditions



b.

High traffic conditions

c.

Unavailability of the channel

d.

All of the above

ANSWER: All of the above

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

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 allocation

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

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 spectrum

d.

All of the above

ANSWER: Accommodating large number of users in limited spectrum

49) When all of the radio channels are in use in a trunking system

a.

The user is blocked

b.

The access to the system is denied

c.

The queue may be provided

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

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

c.

Blocked calls

d.

All of the above

ANSWER: All of the above

53) Co-channel reuse ratio depends upon

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

ANSWER: Both a and b

14) Increase in Co- channel reuse ratio indicates

a.

Better transmission quality

b.

Larger capacity

c.

Low co-channel interference

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

56) Traffic intensity is expressed in

a.

Erlangs /MHz /km

2

b.

Erlangs

c.

$\lambda$ / 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

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 ground

b.

Decreasing the strength of antenna

c.

Decreasing the S/N ratio at the antenna 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

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 without loss of energy

c.

Part of energy gets absorbed

d.

Both a and c

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

64) Brewster angle is the angle 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

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 basestation

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 message 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

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

71) The free space model of propagation refers to

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 correct

b.

1 and 3 are correct

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c.

2 and 3 are correct

d.

All the three are correct

ANSWER: 1 and 2 are correct

72) According to Friis free space equation

1. Received power falls with square of the distance between the transmitter and receiver
2. Increases with square of the distance between the transmitter and receiver
3. Received power increases with gains 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

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 users are 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 code

ANSWER: Same spectrum and different 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

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 receiver

b.

Number of bit errors during 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

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

1. Equalizer algorithm

2. Equalizer structure

3. Rate of change of multipath radio channel

4. Amplitude of signal

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

85) The Linear Equalizer may be implemented as

a.

FIR filter

b.

Lattice filter

c.

Low pass filter

d.

Both a and b

e.

Both a and c

ANSWER: Both a and b

86) Linear equalizer is also known as

a.

Transversal filter

b.

Lattice filter

c.

Low pass filter

d.

None of the above

ANSWER: Transversal filter

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 operations 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

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

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

94) In time diversity

a.

Multiple versions of signals are transmitted at different time instants

b.

The signal is transmitted using multiple channels

c.

Signal is transmitted with 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

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 methods

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

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

ANSWER: Sub-band coding

104) The speech coding technique that 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

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 past samples
2. Current signal sample is independent of past samples
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 correct

109) Multi pulse excited LPC 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

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

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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

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 correct

b.

1, 2 and 3 are correct

c.

2 and 4 are correct

d.

All four are correct

ANSWER: 1, 2 and 3 are correct

116) FDMA is the division of

a.

Time

b.

Phase

c.

Spectrum

d.

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

b.

FDMA

c.

CDMA

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

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 time slots

b.

Each user is assigned unique frequency slots

c.

Each user is assigned a unique code sequence

d.

Each signal is modulated 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

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 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 correct

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

128) Global Positioning System uses

a.

CDMA

b.

TDMA

c.

SDMA

d.

FDMA

ANSWER: CDMA

129) CDMA is advantageous over other SpreadSpectrum 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

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

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

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

b.

1, 2 and 4 are correct

c.

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

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

134) Advantages of using OFDM include

1. Avoids complex equalizers
2. Low symbol rate and guard interval
3. Avoids ISI
4. Multiple users at same frequency

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

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

b.

2 and 3 are correct

c.

1, 2 and 4 are correct

d.

All the four are correct

ANSWER: 1, 2 and 4 are correct

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

c.

Multiple users on multiple channels at different timeslots

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 protocol

b.

Scheduled access protocol

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

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 beams

b.

Smart antennas pointing towards mobile stations

c.

Use of different frequencies at same time slot

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 Doppler spread

b.

Indirectly proportional to 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 Dopplerspread are

a.

Fast fading

b.



Frequency non selective fading

c.

Flat fading

d.

Frequency selective fading

ANSWER: Fast fading

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 channel

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

149) The power delay profile helps in determining

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

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 channel 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

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

ANSWER: All the three are correct