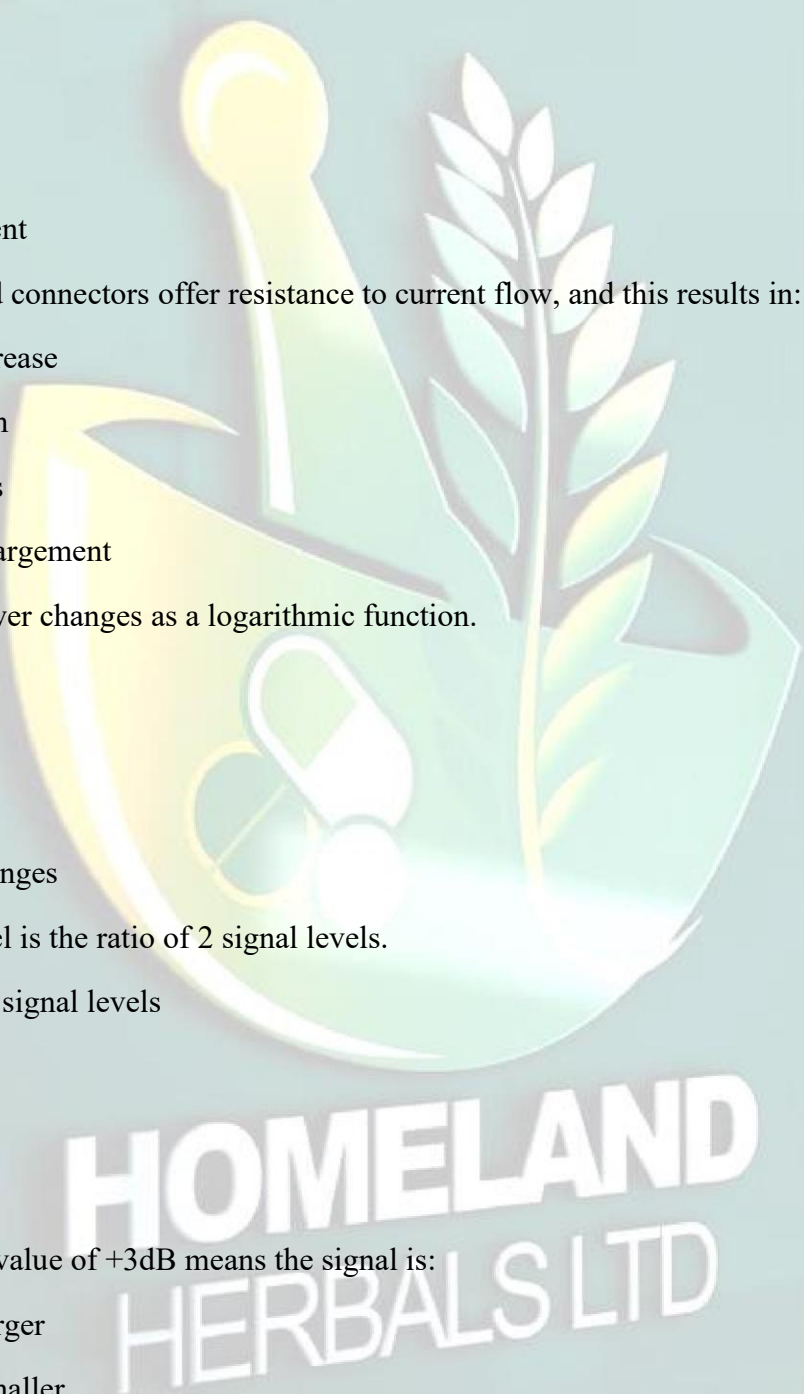


DCIT 428 IA

1. The effect of an amplifier boosting a signal strength is known as:
 - A. increase
 - B. gain
 - C. expansion
 - D. enlargement
 2. Cables and connectors offer resistance to current flow, and this results in:
 - A. signal increase
 - B. signal gain
 - C. signal loss
 - D. signal enlargement
 3. Signal power changes as a logarithmic function.
 - A. True
 - B. False
 - C. It depends
 - D. Never changes
 4. The decibel is the ratio of 2 signal levels.
 - A. actually 4 signal levels
 - B. it depends
 - C. True
 - D. False
 5. A decibel value of +3dB means the signal is:
 - A. 2 times larger
 - B. 2 times smaller
 - C. 3 times larger
- 

D. 3 times smaller

6. A decibel value of +10dB means the signal is:

A. 100 times larger

B. 100 times smaller

C. 10 times larger

D. 10 times smaller

7. Which of the following is not true about an isotropic radiator?

A. radiates equally well in all directions

B. provides a reference point for representing gain

C. expressed as dBi

D. has a value of 0 dBm

8. The size of an antenna depends on the frequency it is designed to operate on.

A. True

B. False

C. Only at very high frequencies

D. Only at very low frequencies

9. Which of the following is not a type of antenna?

A. Omnidirectional

B. quadpole

C. dipole

D. monopole

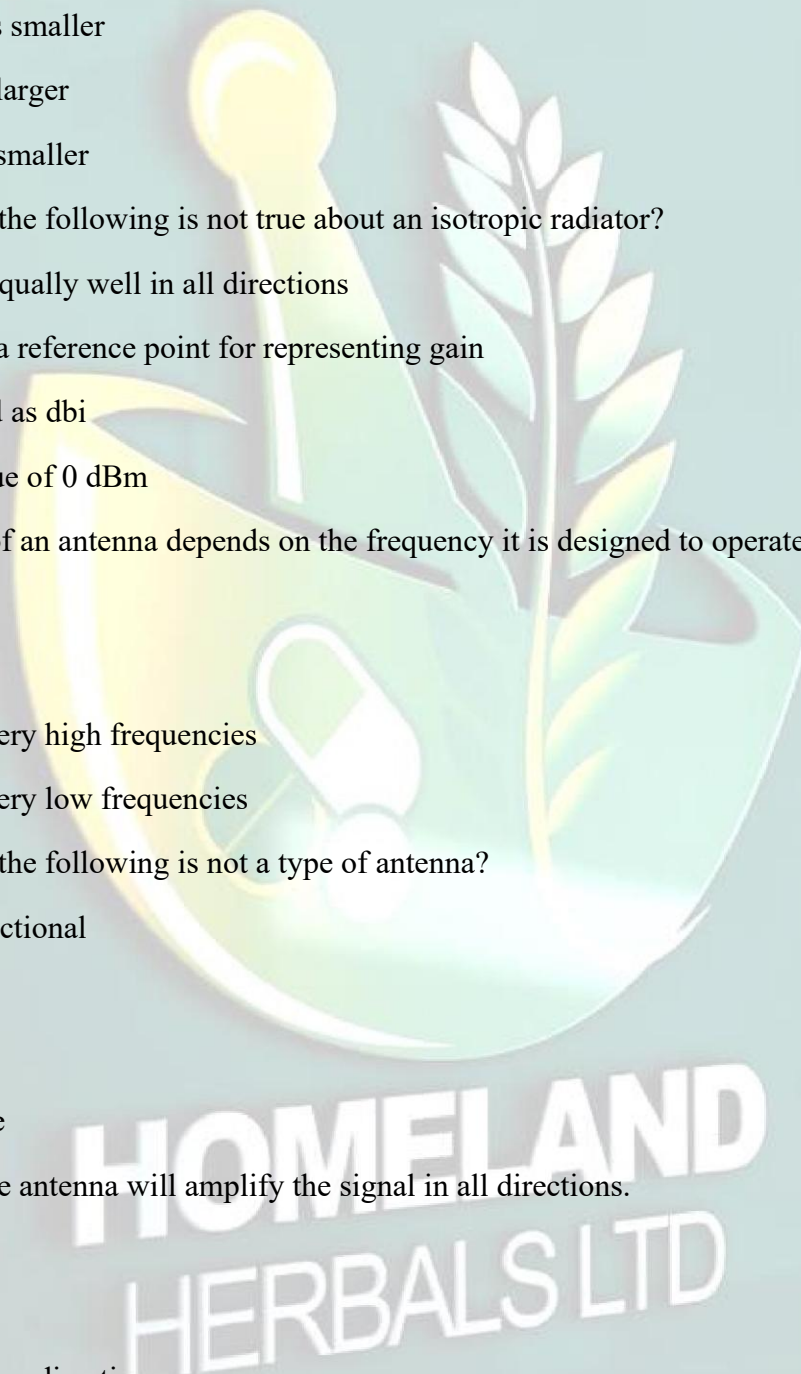
10. A passive antenna will amplify the signal in all directions.

A. True

B. False

C. Only in one direction

D. Does not amplify the signal.



11. The decibel is the logarithmic unit used to express:

- A. Frequency
- B. Power
- C. Wavelength
- D. Voltage

12. Which of the following is a guided transmission medium?

- A. Fiber optic cable
- B. Radio wave
- C. Microwave
- D. Infrared

13. What is the primary purpose of modulation in wireless communication?

- A. Improve signal quality
- B. Increase signal strength
- C. Reduce interference
- D. Enable long-distance transmission

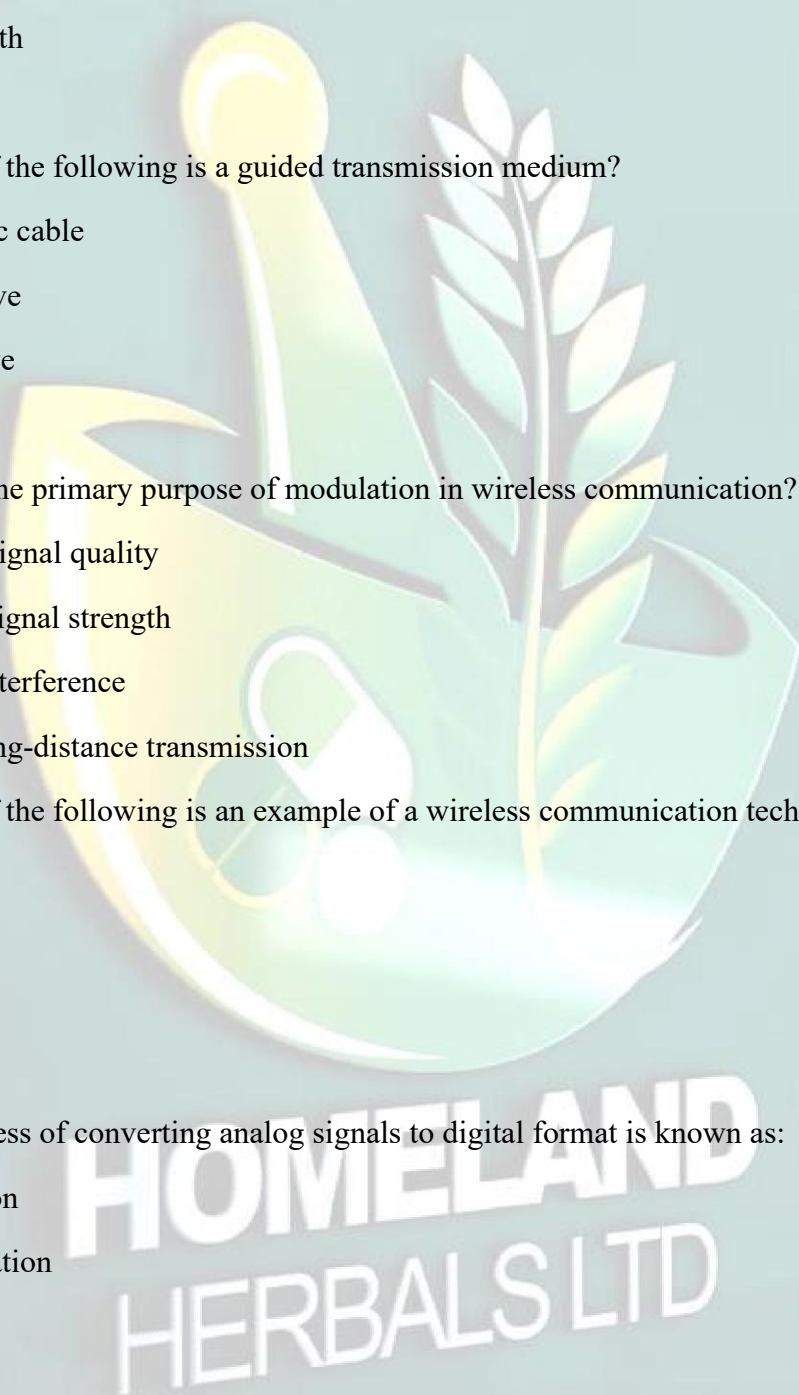
14. Which of the following is an example of a wireless communication technology?

- A. Bluetooth
- B. Ethernet
- C. USB
- D. HDMI

15. The process of converting analog signals to digital format is known as:

- A. Modulation
- B. Demodulation
- C. Encoding
- D. Sampling

16. Which of the following is not a wireless communication standard?



- A. Wi-Fi
- B. Bluetooth
- C. LTE
- D. Ethernet

17. The maximum data rate that can be achieved in a noiseless channel is determined by:

- A. Nyquist bandwidth
- B. Shannon capacity
- C. Signal-to-noise ratio
- D. Channel bandwidth

18. Which of the following is a disadvantage of wireless communication?

- A. Limited range
- B. High cost
- C. Complexity
- D. Low data rates

19. In wireless communication, what is the purpose of error correction coding?

- A. Enhance security
- B. Reduce interference
- C. Improve data transmission reliability
- D. Increase signal strength

20. Which of the following is not a component of a cellular network?

- A. Base station
- B. Mobile device
- C. Network switch
- D. Subscriber Identity Module (SIM) card

21. Which of the following is used to provide long-range communication?

- A. Radio waves

B. Infra-red waves

C. Gamma rays

D. None of the above

22. What is the primary function of a repeater in wireless communication?

A. Amplify signals

B. Decode signals

C. Modulate signals

D. Encrypt signals

23. What is the purpose of the Access Point (AP) in wireless networks?

A. Connect wired and wireless networks

B. Amplify signals

C. Encrypt data

D. Decode signals

24. Which of the following is a type of guided transmission medium?

A. Coaxial cable

B. Wi-Fi

C. Infrared

D. Bluetooth

25. Which of the following is not a wireless channel propagation mechanism?

A. Reflection

B. Refraction

C. Diffraction

D. Transmission

26. What is the primary purpose of error detection coding in wireless communication?

A. Enhance security

B. Reduce interference

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C. Improve data transmission reliability

D. Increase signal strength

27. Which of the following is not an advantage of wireless communication?

A. Mobility

B. Scalability

C. Ease of deployment

D. Unlimited bandwidth

28. Which of the following is a wireless communication technology commonly used in shortrange applications like wireless mice and keyboards?

A. Bluetooth

B. Wi-Fi

C. Cellular

D. NFC

29. Which of the following is not a component of a wireless communication system?

A. Transceiver

B. Antenna

C. Modem

D. Router

30. What is the function of a router in wireless networks?

A. Connect multiple networks

B. Transmit signals over long distances

C. Decode wireless signals

D. Amplify wireless signals

31. Which of the following is not a type of wireless antenna?

A. Yagi antenna

B. Parabolic dish antenna

C. Coaxial antenna

D. Patch antenna

32. Which of the following is not a wireless communication frequency band?

A. 2.4 GHz

B. 5 GHz

C. 60 GHz

D. 100 MHz

33. What is the purpose of frequency hopping in wireless communication?

A. Increase data transfer rates

B. Improve signal quality

C. Reduce interference

D. Extend the range of communication

34. Which of the following is not a wireless network security mechanism?

A. WPA2

B. SSL

C. WEP

D. MAC filtering

35. What is the purpose of a beacon frame in wireless networks?

A. Encrypt data transmission

B. Identify network devices

C. Allocate network resources

D. Establish network synchronization

36. Which of the following wireless communication technologies is commonly used for short-range communication between devices?

A. NFC

B. LTE

C. WiMAX

D. Satellite communication

37. What is the purpose of error correction coding in wireless communication?

A. Improve network performance

B. Enhance data security

C. Increase transmission speed

D. Minimize data loss or errors

38. Which of the following is a wireless networking standard commonly used for home and small office networks?

A. Ethernet

B. USB

C. Bluetooth

D. Wi-Fi

39. What is the purpose of an MAC address in wireless communication?

A. Identify network interfaces

B. Establish network synchronization

C. Encrypt data transmission

D. Allocate IP addresses

40. Which of the following wireless communication technologies uses radio waves to transmit data over short distances?

A. Bluetooth

B. LTE

C. Satellite communication

D. Fiber optics

41. What is the purpose of handover in cellular networks?

A. Secure data transmission

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B. Allocate network resources

C. Manage signal interference

D. Maintain seamless connectivity during mobility

42. Which of the following is not a factor that affects wireless signal propagation?

A. Reflection

B. Refraction

C. Diffraction

D. Gravity

43. Which of the following is not a method for increasing the capacity of wireless communication systems?

A. Multiple-input multiple-output (MIMO)

B. Orthogonal Frequency Division Multiplexing (OFDM)

C. Spread Spectrum Techniques

D. Time Division Multiple Access (TDMA)

44. What is the purpose of an Access Point (AP) in wireless networks?

A. Connect wired and wireless networks

B. Authenticate network users

C. Allocate IP addresses

D. Transmit data over long distances

45. Which of the following is not a wireless communication protocol used for secure online transactions? A. HTTPS

B. SSL/TLS

C. SSH

D. SNMP

46. What is the purpose of beacon frames in Wi-Fi networks?

A. Identify network devices

B. Establish network synchronization

C. Authenticate network users

D. Encrypt data transmission

47. Which of the following wireless communication technologies is commonly used for point-to-point communication over long distances? A. Wi-Fi

B. Bluetooth

C. Microwave

D. NFC

48. Which of the following wireless communication technologies is commonly used for outdoor wireless networking?

A. Wi-Fi

B. Bluetooth

C. Zigbee

D. WiMAX

49. What is the primary purpose of error detection coding in wireless communication?

A. Enhance network security

B. Reduce interference

C. Improve data transmission reliability

D. Increase signal strength

50. Which of the following wireless communication technologies is commonly used for mobile cellular networks?

A. LTE

B. Wi-Fi

C. Bluetooth

D. NFC

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1. B
2. C
3. A
4. C
5. A
6. C
7. D
8. A
9. B
10. B
11. B
12. A
13. D
14. A
15. D
16. D
17. B
18. A
19. C
20. D
21. A 22.
A 23.
A
24. A
25. D
26. C
27. D
28. A
29. D
30. A
31. C
32. D
33. C
34. B
35. B
36. A



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- 37. D
- 38. D
- 39. A
- 40. A
- 41. D
- 42. D
- 43. C
- 44. A
- 45. D
- 46. A
- 47. C
- 48. D
- 49. C
- 50. A

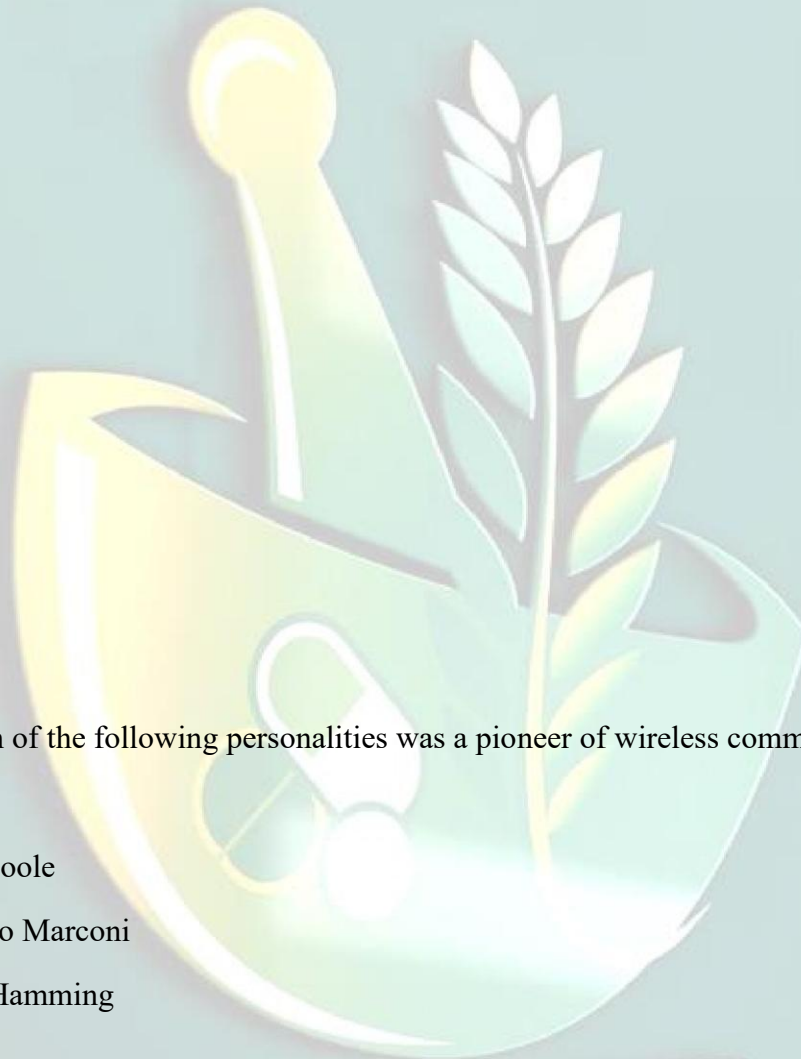
QUIZ 1

1. Which of the following personalities was a pioneer of wireless communication A.

- Alan Turing
- B. George Boole
- C. Guglielmo Marconi
- D. Richard Hamming

2. Which of the following personalities is NOT considered as a pioneer of wireless communication

- A. Alan Turing
- B. Henrich Hertz
- C. Guglielmo Marconi
- D. Nikola Tesla



3. Wireless communication enables easy of Mobility

- A. True
- B. False

4. All of the following are reasons why we need wireless systems except

- A. Mobility
- B. Minimise required infrastructure
- C. Disaster recovery
- D. Limited spectrum

5. which of the following is NOT a key issue affecting wireless systems A.


- Wireless links are inherently complex
- B. Wireless links suffer from unfavorable channel characteristics
- C. There is a very limited spectrum for wireless communication
- D. Less susceptible to interception

6. Communication engineers are concerned with transmission and reception of signals

- A. True
- B. False

7. Which of the following is NOT part of the communication process

- A. Generation of message signal
- B. The description of message signal
- C. Coding of signal in form suitable for transmission
- D. Storing of the transmitted signal

- 
8. Which of the following is NOT an example of unguided media
- A. Microwave
 - B. Radio wave
 - C. coaxial
 - D. Infrared
9. Which of the following is NOT an example of guided media
- A. fibre optic
 - B. Microwave
 - C. twisted pair
 - D. coaxial
10. Which of the following are involved in establishing communication with the base station
- A. Forward control channel
 - B. Reverse control channel
 - C. Forward traffic channel
 - D. All of the above
11. Which of the following is NOT a component of a cellular system
- A. User
 - B. Mobile station/unit
 - C. Base station
 - D. Mobile switching center

12. The Nyquist bandwidth is used to determine the information carrying capacity of noisy channel 16(1) which of the following is the correct representation of Nyquist bandwidth

- A. True
- B. False
- C. $C = 2*B$
- D. $C = 2B \log_2 M$
- E. $C = B \log_2(1+SNR)$
- F. $C = B \log_2(SNR)$

QUIZ 1

- 1. C
- 2. A 3. A 4. D 5. D 6. A
- 7. D
- 8. C
- 9. B
- 10. D
- 11. A
- 12. D

QUIZ 2

1. Which of the following is not a component of a wireless communications system?

- A. Oscilloscope
- B. Mixer
- C. Amplifier
- D. Antenna

2. The function of a filter is to

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- A. allow all signals to pass through
- B. reject all signals
- C. allow some signals and reject others
- D. None of the above

3. Which of the following best describes a device which combines 2 signals into a single output

- A. Filter
- B. Amplitude
- C. Combiner
- D. Mixer

4. When you combine 2 signals to produce a single output, this output will have frequency range of

- 5. which of the following is true about an amplifier
- A. increase the amplitude of an RF signal
- B. It is an active device
- C. The output is an exact copy of the input but with a higher amplitude
- D. All of the above

6. Which of the following must radio communication engineers take into consideration when designing a wireless system?

- A. How the system will be used
- B. Multiple user access
- C. Transmission direction
- D. All of the above

7. Which of the following is a multiple access technique?

- A. TDMA
- B. FDMA
- C. CDMA
- D. All of the above

8. Which of the following is TRUE about time division multiple access technique?

- A. Divides the frequency band into smaller frequency bands
- B. Used mainly in analogue systems
- C. the user is assigned the entire frequency band for transmission
- D. None of the above

9. Which of the following is NOT true about frequency division multiple access technique?

- A. Divides the frequency band into smaller frequency bands
- B. Used mainly in analogue systems
- C. the user is assigned the entire frequency band for transmission
- D. None of the above

10. Which of the following determines the number of users who can share a channel using code division multiplexing technique?

- A. the length of the code
- B. direct sequence spread spectrum
- C. Number of chips in the code
- D. All of the above

11. Which of the following is TRUE about simplex transmission?

- A. Sends data in both directions at the same time
- B. Sends data in both directions but only one way at a time
- C. Forward traffic channel
- D. None of the above

12. Which of the following is TRUE about circuit switched systems?

- A. Used by data networks
- B. Direct connection between caller and recipient
- C. Data transmissions are broken into packets
- D. Each packet is sent independently

13. Which of the following is an advantage of packet switched systems?

- A. Allows better utilization of the network
- B. Allows multiple computers to share the same channel
- C. All of the above
- D. None of the above

14. attenuation is the loss in signal strength

- A. True
- B. False
- C. Neither True nor False
- D. True under special circumstances

15. Electromagnetic Interference is also called noise

- A. True
- B. False
- C. Neither True nor False

D. True under special circumstances

16. Electromagnetic Interference affects signal strength

A. True

B. False

C. Neither True nor False

D. True under special circumstances

17. Which of the following best describes a device which combines 2 signals into a single output

A. Filter

B. Amplitude

C. Combiner

D. Mixer

Quiz 2 Answers

1. A

2. C

3. D

4. The highest sum and the lowest

5. D

6. D

7. D

8. B 9. C

10. C

11. D

12. B

13. D

14. A

15. A

16. A

17. D



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QUIZ 3

1. Wireless communications is based on which of the following?

- A. Electric waves
- B. Magnetic signals
- C. Electromagnetic waves
- D. Electrical signals

2. The speed of light in vacuum is

- A. 3×10^8 kilometres per second
- B. 3×10^8 metres per second
- C. 3×10^8 miles per second
- D. 3×10^8 yards per second

3. Infra-red is part of the electromagnetic spectrum

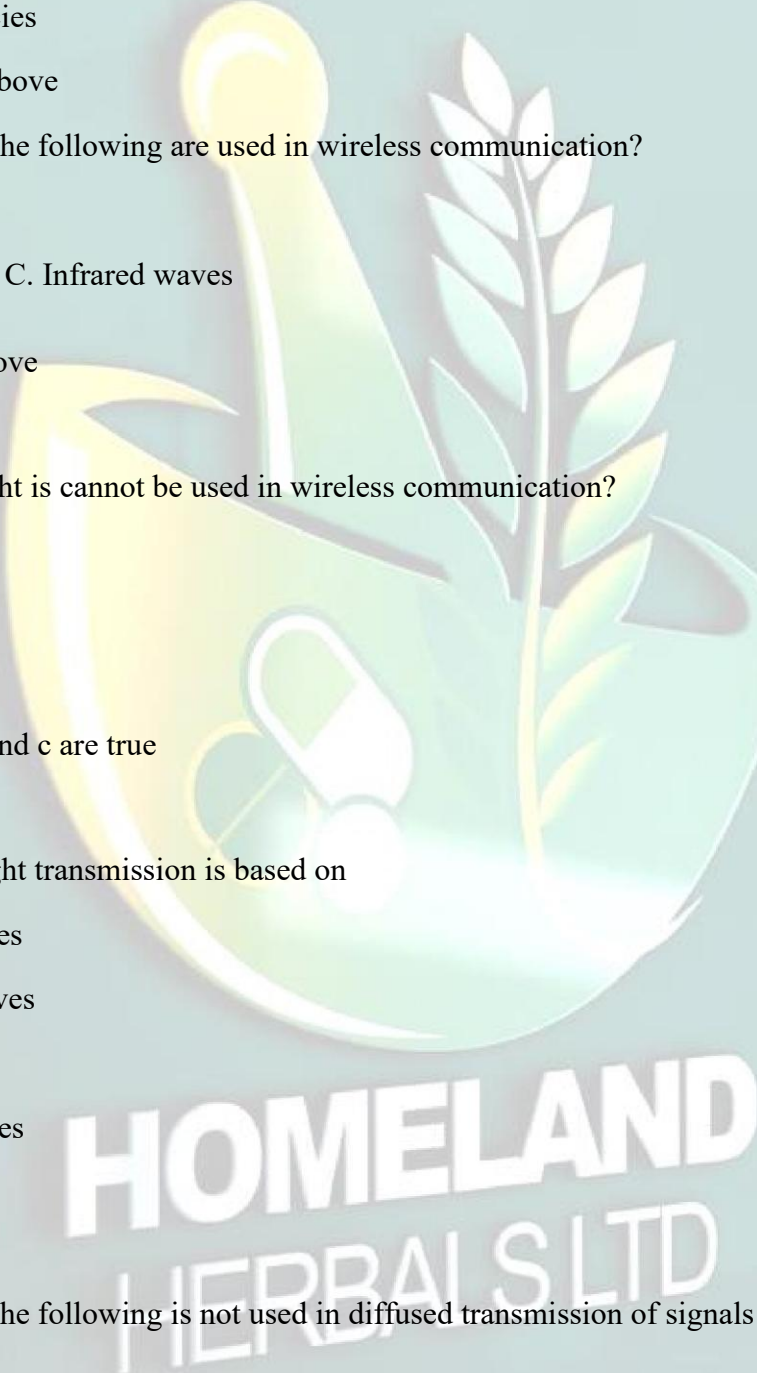
- A. True
- B. False
- C. Only when used in TV remote control
- D. None of the above

4. Long electromagnetic signals have

- A. High frequencies
- B. Medium frequencies
- C. Low frequencies
- D. None of the above



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- 
5. Short electromagnetic signals have
- A. High frequencies
 - B. Medium frequencies
 - C. Low frequencies
 - D. None of the above
6. Which of the following are used in wireless communication?
- A. Radio waves
 - B. Microwaves C. Infrared waves
 - D. All of the above
7. Visible light is cannot be used in wireless communication?
- A. True
 - B. False
 - C. Only at night
 - D. All option a and c are true
8. Line of sight transmission is based on
- A. reflected waves
 - B. diffracted waves
 - C. direct waves
 - D. scattered waves
9. Which of the following is not used in diffused transmission of signals
- A. reflected waves
 - B. bouncing waves

- C. scattered waves
- D. diffracted waves

10. Intensity of a light pulse may be used to communicate data

- A. Not possible
- B. Under some conditions
- C. True
- D. None of the above

11. Which of the following are important components in light communication?

- A. Mixer
- B. Detector
- C. Emitter
- D. Options b and c only

12. Which of the following is not TRUE about light communications?

- A. confined within rooms
- B. does not penetrate walls
- C. allows mobility
- D. is not affected by signals from other parts of the spectrum

13. Which of the following is used to provide long range communication?

- A. Radio waves
- B. Infra-red waves
- C. Gamma rays
- D. None of the above

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14. Which of the following is true about the electric and magnetic fields?
- A. They are perpendicular to each other
 - B. They are out of phase
 - C. The direction of travel is the same as the electric field
 - D. None of the above is true

15. Which of the following is true about radio waves?
- A. can be used to transmit analogue data only
 - B. can be used to transmit digital data only
 - C. can be used to transmit data over long distances
 - D. None of the above is true about radio waves

16. Which of the following are true?
- A. Frequency is measured in Hertz
 - B. Frequency is the number of cycles per second
 - C. Frequency is inversely proportional to wavelength
 - D. All of the above

QUIZ 4

1. The effect of an amplifier boosting a signal strength is known as
- A. increase
 - B. gain
 - C. loss
 - D. enlargement

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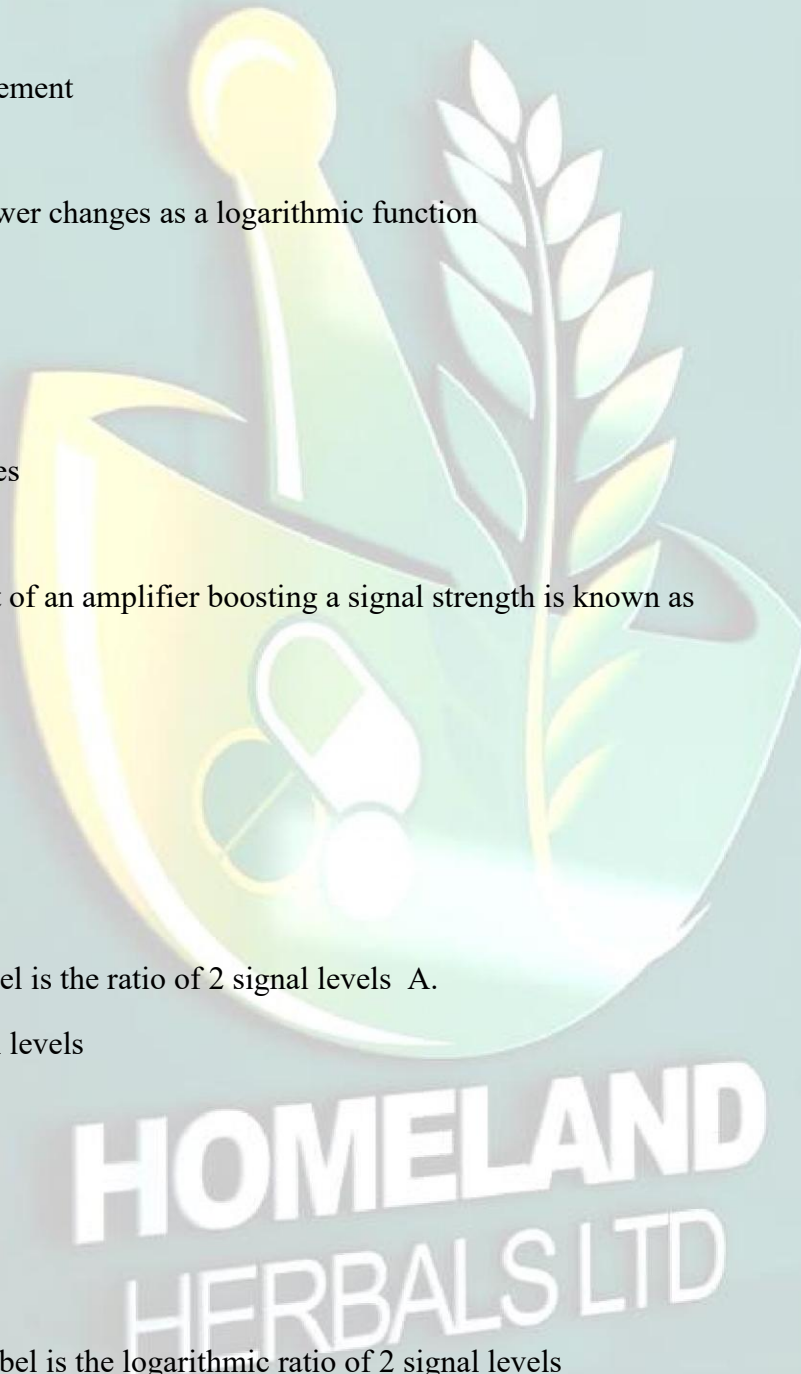
2. Cables and connectors offer resistance to current flow and this results in
- A. signal increase
 - B. signal gain
 - C. signal loss
 - D. signal enlargement

3. Signal power changes as a logarithmic function
- A. True
 - B. False
 - C. It depends
 - D. Never changes

4. The effect of an amplifier boosting a signal strength is known as
- A. increase
 - B. gain
 - C. expansion
 - D. enlargement

5. The decibel is the ratio of 2 signal levels A.
actually 4 signal levels
- B. it depends
 - C. True
 - D. False

6. The decibel is the logarithmic ratio of 2 signal levels
- A. actually 4 signal levels



- B. it depends
- C. True
- D. False

7. A decibel value of +3dB means the signal is

- A. 2 times larger
- B. 2 times smaller
- C. 3 times larger
- D. 3 times smaller

8. A decibel value of +10dB means the signal is

- A. 100 times larger
- B. 100 times smaller
- C. 10 times larger
- D. 10 times smaller

9. which of the following is not true about an isotropic radiator?

- A. radiates equally well in all directions
- B. provides a reference point for representing gain
- C. expressed as dbi
- D. has a value of 0 dBm

10. The size of an antenna depends on the frequency it is designed to operate on

- A. True
- B. False
- C. Only at very high frequencies
- D. Only at very low frequencies

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11. Which of the following is not a type of antenna?

- A. Omnidirectional
- B. quadpole
- C. dipole
- D. monopole

12. A passive antenna will amplify the signal in all directions

- A. True
- B. False
- C. Only in one direction
- D. Does not amplify the signal

13. Which of the following is correct about an active antenna

- A. Has no electrical connections
- B. is larger than a passive antenna
- C. Has a built-in amplifier
- D. the signal and power are fed to the antenna on different conductors

14. Which of the following is not true about the size of an antenna?

- A. Directly proportional to the wavelength of the carrier
- B. Inversely proportional to the frequency of the carrier
- C. Is usually a quarter of the wavelength
- D. Does not depend on the speed of light

15. Which of the following is not a type of antenna?

- A. patch antenna
- B. mix antenna C. yagi antenna
- D. cellular antenna

QUIZ 4

- 1. B
- 2. C
- 3. A
- 4. B
- 5. C
- 6. C
- 7. A
- 8. C
- 9. D
- 10. A
- 11. B
- 12. C
- 13. C
- 14. D
- 15. B

QUIZ 5

1. A standard helps enable interoperability

- A. True
- B. False
- C. Sometimes
- D. It depends on the country

2. Which of the following is not true about a standard?



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- A. It is a formal document
- B. It specifies uniform criteria
- C. It is bulky
- D. It provides technical specification

3. Which of the following is a type of standard? A.

- Open standard
- B. Proprietary standard
- C. Private standard
- D. All of the above

4. Which of the following is a reason for developing Gb/s standards

- A. Interactive gaming
- B. Digital photography
- C. Digital home movies
- D. All of the above

5. Which of the following is not a wired standard?

- A. Firewire
- B. DVI/HDMI
- C. 802.11 n
- D. Gigabit/Ethernet

6. The maximum data rates for wireless standards are always achieved

- A. True
- B. False



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- C. Sometimes
- D. Only for WPAN

7. Consumers will expect that wireless systems will maintain a QoS close to wired systems

- A. True
- B. False
- C. only for WPAN
- D. sometimes only

8. Which of the following statements is not true?

- A. Work on the IEEE 802.15.3 is ongoing
- B. IEEE 802.15.5 is for mesh networking
- C. IEEE 802.15.3c enables multimedia connectivity.
- D. All of the above

9. Which of the following is true?

- A. WirelessHD uses 802.15.3c
- B. WiGig is designed to work with 802.11ac
- C. WiGig is based on 802.15.3c
- D. WHDI uses 802.15.3c

10. Which of the following are application areas of HR WPAN?

- A. Connecting digital cameras to printers and kiosks
- B. Connecting laptops to multimedia projectors and sound systems
- C. Connecting camera-equipped cell phones and tablets to laptops and printers
- D. All of the above

11. Which of the following is not true about Wireless Home Digital Interface?

- A. Requires special adapters
- B. Used to mirror screens of multiple devices
- C. Works in the 5 GHz band
- D. It was developed mainly for uncompressed video and audio

12. Which of the following is not true about WirelessHD?

- A. Uses beamforming for line of communication.
- B. Has no sink
- C. Divides the PHY layer into three sections
- D. Supports USB 2.0 and 3.0

13. Which of the following statements is incorrect?

- A. The piconet coordinator is usually a sink device.
- B. The piconet coordinator has no responsibility for QoS
- C. The first sink device assumes the role of coordinator.
- D. None of the above

14. Which of the following is true about the piconet coordinator?

- A. Provides all of the basic communications timing in a piconet
- B. sends a beacon
- C. responsible for managing QoS
- D. All of the above

15. Which of the following is not a frame in the WirelessHD Mac layer?

- A. Beacon

- B. Channel time allocation period
- C. Contention access period
- D. TDMA

QUIZ 5

1. A
2. C
3. D
4. D
5. C
6. B
7. A
8. A
9. B
10. D
11. A
12. B
13. B
14. D
15. D

Quiz 6

1. Which of the following stands for RFID?
 - A. Relay Frequency Information Device
 - B. Radio Frequency Identification Device
 - C. Radio Frequency Identification
 - D. None of the above is correct
2. Which of the following is not part of the RFID system?
 - A. Tags
 - B. Readers

- C. Amplifier
- D. Transceiver

3. Which of the following is NOT a component required to implement an RFID system?

- A. Antennas
- B. EPCglobal Network Services
- C. Tags
- D. All of the above are components

4. Which of the following is true about Electronic Product Code?

- A. Employs a standardized numbering scheme
- B. Can be programmed on a tag and attached to physical objects
- C. can be 64 bits or 94 bits long
- D. All of the above

5. Which of the following is not true about an active tag?

- A. Equipped with a battery
- B. Can transmit signals over a longer distance
- C. Has a longer lifetime due to the battery
- D. Transmits periodic beacon signals

6. Tags can usually be divided into how many classes

- A. 4
- B. 3
- C. 2
- D. limitless

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7. Which of the following is true about an active tag?

- A. Does not use an EPC
- B. Has an extended tag identification
- C. unauthenticated access control
- D. None of the above

8. Which of the following statements is not true?

- A. Readers cannot write data on tags
- B. A reader can provide energy to a passive tag
- C. Read distance is determined by size and location of tag
- D. Read distance is determined by amount of power

9. RFID operating at low frequency (135KHz) may be used in which of the following applications?

- A. Animal identification
- B. Access control
- C. Industrial automation
- D. All of the above

10. Which of the following is NOT an application area of RFID operating at microwave frequencies?

- A. Electronic toll collection
- B. Smart cards
- C. Industrial automation
- D. Access control

11. Ultra-High Frequency RFID is not used for?

- A. Animal tracking
- B. Asset tracking
- C. Inventory control
- D. None of the above

12. Antennas used in RFID tags may be limited in size due to the dimension of the tag itself

- A. True
- B. False
- C. Only true if the tag is an active tag
- D. Only true if the tag is passive

13. Antenna size is

- A. directly proportional to the frequency
- B. inversely proportional to the frequency
- C. inversely proportional to the wavelength
- D. None of the above

14. RFID transmission uses which of the following protocols?

- A. Slotted Aloha
- B. Channel time allocation period
- C. Contention access period
- D. Slotted terminating adaptive collection

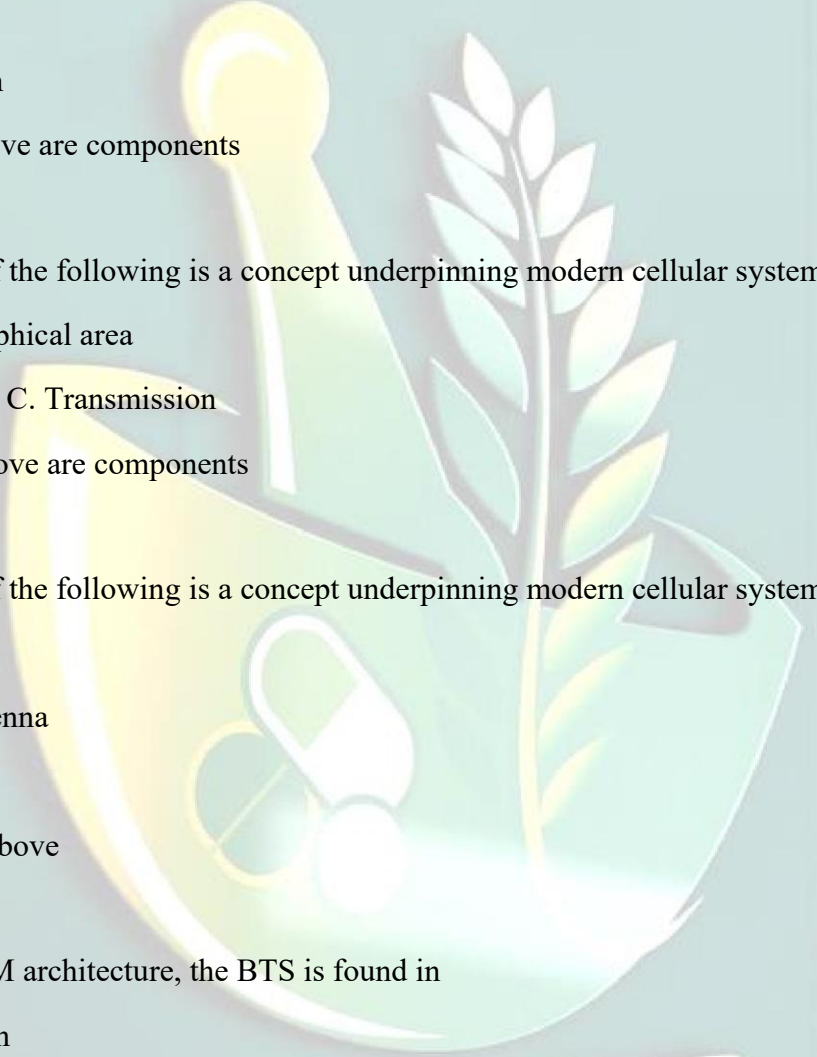
QUIZ 6

- 1. C
- 2. C

3. D
4. D
5. C
6. A 7. D
8. A
9. D
10. B
11. A 12. A 13. D
14. D

QUIZ 7

1. Traditional mobile systems were characterized by which of the following?
A. Small size antennas B.
Low power transmitters
C. Large powerful antenna
D. None of the above is correct
2. Modern cellular systems are characterized by which of the following?
A. Small size antennas B.
Low power transmitters C.
Large powerful antennas
D. None of the above is correct
3. Which of the following is a concept underpinning modern cellular systems?
A. Large geographical area
B. Cell splitting C. Transmission
D. All of the above are components

- 
4. Which of the following is a concept underpinning modern cellular systems?
- A. Frequency reuse
 - B. Cell size
 - C. Amplification
 - D. All of the above are components
5. Which of the following is a concept underpinning modern cellular systems?
- A. Large geographical area
 - B. Cell splitting C. Transmission
 - D. All of the above are components
6. Which of the following is a concept underpinning modern cellular systems?
- A. Cluster
 - B. Powerful antenna
 - C. Handoff
 - D. None of the above
7. In the GSM architecture, the BTS is found in
- A. Mobile station
 - B. Network subsystem
 - C. Base station subsystem
 - D. In both network and Mobile station subsystems
8. In the GSM architecture, the EIR is found in A.
- Mobile station

- B. Network subsystem
- C. Base station subsystem
- D. In both network and Mobile station subsystems

9. In the cellular system a cluster is

- A. A group of HLRs
- B. A group of VLR
- C. A group of mobile equipment
- D. A group of cells

10. The idea behind cellular system is to use ALL of the assigned bandwidth in

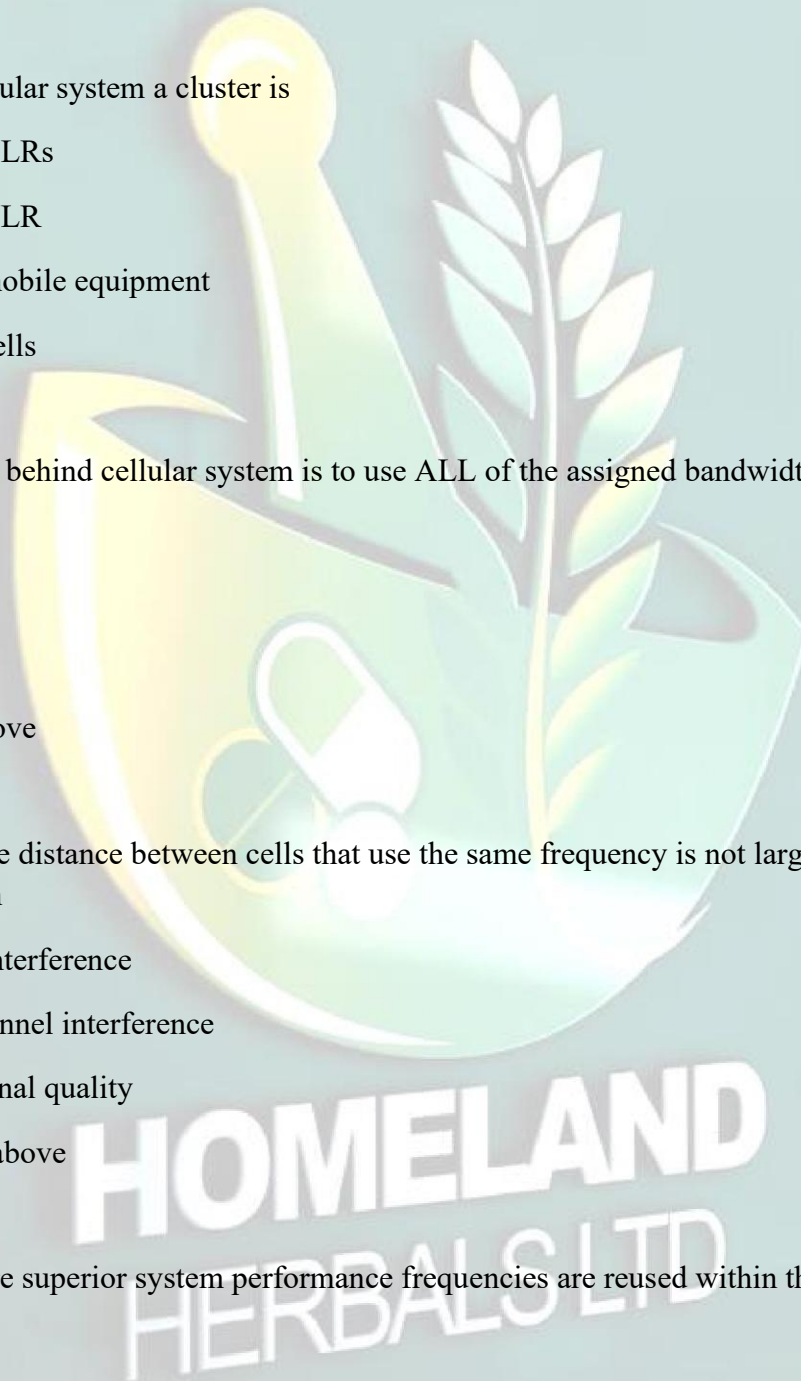
- A. A cluster
- B. A cell
- C. Area
- D. All of the above

11. When the distance between cells that use the same frequency is not large enough it results in

- A. co-channel interference
- B. Adjacent channel interference
- C. Improves signal quality
- D. None of the above

12. To ensure superior system performance frequencies are reused within the cluster

- A. True
- B. False
- C. Only when the cluster size is 7



D. Only when the cluster size is less than 7

13. To handle increase in subscriber base mobile operators will use which of the following concepts

- A. handoff
- B. cluster size
- C. cell splitting
- D. none of the above

14. Which of the following concepts is central to ensuring mobility

- A. Handoff
- B. Frequency reuse
- C. Cell splitting
- D. None of the above

15. It is required to provide radio communication to a small village, population 800. Available bandwidth is 20 MHz. Each user requires 15KHz bandwidth. How many antennas will be needed?

$(20 \times 10^6) / (15 \times 10^3) \Rightarrow$ support for 1333 users with one antenna but we need only 800 users

- A. 20
- B. 5
- C. 2
- D. 1

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16. The population of the village in Q15 above is expected to increase to 5000 in the next 12 months due to development projects being undertaken. The bandwidth requirement of users is also expected to double, the operator is able to acquire an additional 4MHz of bandwidth. How many users will the system be able to support using the traditional approach?

$$(24 \times 10^6) / (15 \times 10^3 \times 2)$$

- A. 800
- B. 666.6667
- C. 1333.333
- D. 2500

17. A centre excited cell makes use of

- A. A sectored antenna
- B. A 6 sectored antenna
- C. A 3 sectored antenna
- D. An omni directional antenna

QUIZ 7

- 1. D
- 2. B
- 3. B
- 4. A
- 5. B 6. C 7. C
- 8. B
- 9. D
- 10. D
- 11. A
- 12. A
- 13. C
- 14. A 15. D

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16. A
17. D



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