* Query successful

Okay, here are 100 multiple-choice questions with the correct options, incorporating information from both "CHAP01.pdf" and "2025AssignmentNo 2.docx":

**1. What is the primary purpose of communication systems?**

* A) To store information
* B) To transfer information
* C) To process information
* D) To encrypt information

Correct Answer: B

**2. In a communication system, what is the role of the "source"?**

* A) To transmit the signal
* B) To receive the signal
* C) To generate the message
* D) To amplify the signal

Correct Answer: C

**3. Which of the following is a function of the transmitter?**

* A) Transducer
* B) Demodulator
* C) Antenna
* D) Both A and C

Correct Answer: D

**4. Which of the following can be a "channel" in a communication system?**

* A) Optical fiber
* B) Free space
* C) Cable
* D) All of the above

Correct Answer: D

**5. What is the role of the receiver in a communication system?**

* A) To amplify the signal
* B) To demodulate the signal
* C) To transmit the signal
* D) To encode the signal

Correct Answer: B

**6. What does the term "message" refer to in communication?**

* A) A time-varying quantity
* B) A sequence of discrete symbols
* C) Information to be conveyed
* D) All of the above

Correct Answer: D

**7. What process takes place in the transmitter to prepare the message for transmission?**

* A) Amplification
* B) Modulation
* C) Encoding
* D) Filtering

Correct Answer: B

**8. In digital communication, what is the purpose of the Analog to Digital Converter (ADC)?**

* A) To encrypt data
* B) To convert analog input to bits
* C) To modulate the signal
* D) To multiplex data

Correct Answer: B

**9. Which of the following is an example of a hardwire channel?**

* A) Air
* B) Coaxial cable
* C) Vacuum

Correct Answer: B

**10. What is the main function of a receiver?**

* A) To transmit signals
* B) To demodulate the received signal
* C) To encode messages
* D) To amplify messages

Correct Answer: B

**11. What are the connected devices in the Internet called?**

* A) End systems
* B) Packet switches
* C) Communication links
* D) Protocols

Correct Answer: A

**12. What are the communication links in the Internet made of?**

* A) Fiber
* B) Copper
* C) Radio
* D) All of the above

Correct Answer: D

**13. What is the function of packet switches?**

* A) To transmit data
* B) To forward packets
* C) To encode data
* D) To display information

Correct Answer: B

**14. What is the transmission rate of a communication link called?**

* A) Speed
* B) Bandwidth
* C) Frequency
* D) Data rate

Correct Answer: B

**15. Which of the following is a function of protocols?**

* A) Defining the format of messages
* B) Defining the order of messages
* C) Defining actions taken on message transmission
* D) All of the above

Correct Answer: D

**16. What does RFC stand for?**

* A) Request for Communication
* B) Request for Comments
* C) Recommended Format for Computers
* D) Regular Flow Control

Correct Answer: B

**17. What is the role of the IETF?**

* A) To design web pages
* B) To develop Internet standards
* C) To manufacture network hardware
* D) To provide Internet access

Correct Answer: B

**18. Which of the following is considered a network edge component?**

* A) Routers
* B) Hosts
* C) Switches
* D) ISPs

Correct Answer: B

**19. Where are servers often located?**

* A) Homes
* B) Data centers
* C) Small businesses
* D) Mobile phones

Correct Answer: B

**20. What are the communication links connected to access networks called?**

* A) Physical media
* B) Network core
* C) Edge routers
* D) Servers

Correct Answer: A

**21. What is a common type of residential access network?**

* A) Ethernet
* B) Digital Subscriber Line (DSL)
* C) Fiber Channel
* D) Token Ring

Correct Answer: B

**22. What device is used to transmit data and voice over existing telephone lines?**

* A) Cable modem
* B) DSL modem
* C) Router
* D) Switch

Correct Answer: B

**23. In a cable network, what is used to transmit different channels?**

* A) Time division multiplexing
* B) Frequency division multiplexing
* C) Wavelength division multiplexing
* D) Code division multiplexing

Correct Answer: B

**24. What does HFC stand for?**

* A) High-Frequency Communication
* B) Hybrid Fiber Coax
* C) Hyper-Fast Connection
* D) Home Fiber Connection

Correct Answer: B

**25. What is a key difference between DSL and cable network access?**

* A) DSL uses shared access.
* B) Cable has dedicated access to the central office.
* C) DSL has dedicated access to the central office.
* D) Cable uses telephone lines.

Correct Answer: C

**26. What is a characteristic of a Passive Optical Network (PON)?**

* A) It uses electrically powered switching equipment.
* B) It uses optical splitters.
* C) It provides active optical service.
* D) It requires a router at each customer's premises.

Correct Answer: B

**27. What type of equipment does an Active Optical Network (AON) use to manage signal distribution?**

* A) Optical splitters
* B) Electrically powered switching equipment
* C) Passive hubs
* D) Fiber cables only

Correct Answer: B

**28. Which devices are commonly found in a home network?**

* A) DSL modem
* B) Router
* C) Wireless access point
* D) All of the above

Correct Answer: D

**29. What transmission rates are typical for Ethernet networks?**

* A) 10 Mbps
* B) 100 Mbps
* C) 1 Gbps
* D) All of the above

Correct Answer: D

**30. What is the function of an Ethernet switch in an enterprise network?**

* A) To connect to the Internet
* B) To connect end systems
* C) To provide wireless access
* D) To act as a firewall

Correct Answer: B

**31. What connects an end system to a router in a wireless access network?**

* A) Cable modem
* B) Base station
* C) DSL modem
* D) Ethernet switch

Correct Answer: B

**32. What is another name for a base station in a wireless network?**

* A) Router
* B) Access point
* C) Switch
* D) Modem

Correct Answer: B

**33. Which of the following is a common wireless LAN technology?**

* A) 3G
* B) 4G
* C) Wi-Fi
* D) LTE

Correct Answer: C

**34. What is the typical range of a wireless LAN?**

* A) Kilometers
* B) Hundreds of meters
* C) 100 feet
* D) Miles

Correct Answer: C

**35. Which generation of cellular technology is LTE?**

* A) 2G
* B) 3G
* C) 4G
* D) 5G

Correct Answer: C

**36. What does a host do with an application message before transmitting it?**

* A) Encrypts it
* B) Breaks it into packets
* C) Compresses it
* D) Amplifies it

Correct Answer: B

**37. What is the transmission rate at which a host transmits a packet into an access network called?**

* A) Packet rate
* B) Link capacity
* C) Data rate
* D) Signal strength

Correct Answer: B

**38. What is the time required to transmit a packet into a link called?**

* A) Propagation delay
* B) Transmission delay
* C) Queuing delay
* D) Processing delay

Correct Answer: B

**39. If a packet is L bits long and the link transmission rate is R, how is the transmission delay calculated?**

* A) L x R
* B) L + R
* C) L - R
* D) L / R

Correct Answer: D

**40. What is another term for link transmission rate?**

* A) Link speed
* B) Link bandwidth
* C) Link frequency
* D) Link distance

Correct Answer: B

**41. What is a physical link?**

* A) A protocol
* B) What lies between transmitter and receiver
* C) A type of software
* D) A network application

Correct Answer: B

**42. What are the two main categories of physical media?**

* A) Wired and wireless
* B) Guided and unguided
* C) Optical and electrical
* D) Digital and analog

Correct Answer: B

**43. Which of the following is an example of guided media?**

* A) Radio waves
* B) Fiber optic cable
* C) Microwaves
* D) Infrared waves

Correct Answer: B

**44. Which of the following is an example of unguided media?**

* A) Coaxial cable
* B) Twisted pair cable
* C) Radio waves
* D) Optical fiber

Correct Answer: C

**45. What type of cable is "twisted pair"?**

* A) Optical
* B) Copper
* C) Glass
* D) Plastic

Correct Answer: B

**46. What is a key characteristic of fiber optic cable?**

* A) It carries electrical signals.
* B) It carries light pulses.
* C) It is susceptible to electromagnetic noise.
* D) It has low transmission speeds.

Correct Answer: B

**47. What is a benefit of fiber optic cable?**

* A) Low cost
* B) High speed
* C) Easy installation
* D) High error rate

Correct Answer: B

**48. In radio media, how are signals carried?**

* A) Through wires
* B) In the air
* C) In the electromagnetic spectrum
* D) Through glass fibers

Correct Answer: C

**49. Which of the following is a type of radio link?**

* A) Terrestrial microwave
* B) Coaxial cable
* C) Optical fiber
* D) Twisted pair

Correct Answer: A

**50. What is a potential effect of the propagation environment on radio waves?**

* A) Reflection
* B) Obstruction
* C) Interference
* D) All of the above

Correct Answer: D

**51. What is the network core composed of?**

* A) End systems
* B) Access networks
* C) Interconnected routers
* D) Physical media

Correct Answer: C

**52. What is the process of breaking application-layer messages into smaller chunks called?**

* A) Encoding
* B) Modulation
* C) Packet-switching
* D) Circuit switching

Correct Answer: C

**53. What is the term for the chunks of data in packet switching?**

* A) Frames
* B) Segments
* C) Packets
* D) Datagrams

Correct Answer: C

**54. In packet switching, how is each packet transmitted?**

* A) At varying speeds
* B) At full link capacity
* C) Based on priority
* D) Using circuit switching

Correct Answer: B

**55. What is "store-and-forward" in packet switching?**

* A) A method to prioritize packets
* B) The process of temporarily storing a packet at a router before forwarding it
* C) A technique to reduce packet size
* D) A way to encrypt packet headers

Correct Answer: B

**56. What is the delay for a one-hop transmission if L = 7.5 Mbits and R = 1.5 Mbps?**

* A) 2 seconds
* B) 5 seconds
* C) 10 seconds
* D) 15 seconds

Correct Answer: B

**57. What can happen if the arrival rate of packets to a link exceeds the transmission rate?**

* A) Packets are duplicated
* B) Packets are reordered
* C) Packets will queue
* D) Packets are compressed

Correct Answer: C

**58. What is a possible consequence of packets queuing in a router?**

* A) Increased throughput
* B) Packet loss
* C) Reduced delay
* D) Higher security

Correct Answer: B

**59. What are the two key functions of the network core?**

* A) Encoding and decoding
* B) Modulation and demodulation
* C) Forwarding and routing
* D) Encryption and decryption

Correct Answer: C

**60. What does the forwarding function in a router do?**

* A) Determines the source-destination route
* B) Moves packets from input to output
* C) Controls network congestion
* D)

Correct Answer B) Moves packets from input to output