



Name of the Bundle	Proficient Bundle V1	Subject	Networking V1
Topic	Transmission Media	Last updated on	11 September 2025

Multiple Choice Questions on Transmission Media:

1. What is a transmission medium in data communication?

- A. A device that encrypts data
- B. Anything that carries signals or data between sender and receiver
- C. Software that manages network traffic
- D. A protocol for data formatting

Answer: B. Anything that carries signals or data between sender and receiver

Explanation: Transmission media physically or wirelessly carry data from source to destination.

2. What are the two primary types of transmission media?

- A. Digital and analog
- B. Wired (physical) and wireless
- C. Optical and electrical
- D. Simplex and duplex

Answer: B. Wired (physical) and wireless

Explanation: Transmission media include physical cables and wireless links.



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3. Which of the following is an example of a physical transmission medium?

- A. Radio waves
- B. Fiber optic cable
- C. Infrared signals
- D. Bluetooth

Answer: B. Fiber optic cable

Explanation: Fiber optic cable is a physical medium that carries light signals.

4. Which of these is an example of a wireless transmission medium?

- A. Twisted pair cable
- B Coaxial cable
- C. Radio waves
- D. Fiber optics

Answer: C. Radio waves

Explanation: Radio waves carry data wirelessly through the air.



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5. What role does a transmission medium play in communication?

- A. Controls data encryption
- B. Provides a path for data to travel between devices
- C. Converts analog signals to digital
- D. Compresses the data

Answer: B. Provides a path for data to travel between devices

Explanation: The medium acts as the physical or wireless link for data transmission.

6. Which transmission medium is most susceptible to electromagnetic interference?

- A. Fiber optic cable
- B. Twisted pair cable
- C. Wireless signals
- D. Coaxial cable

Answer: B. Twisted pair cable

Explanation: Twisted pair cables can pick up interference from nearby electrical devices.



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7. Which transmission medium uses light to transmit data?

- A. Twisted pair cable
- B. Radio waves
- C. Fiber optic cable
- D. Coaxial cable

Answer: C. Fiber optic cable

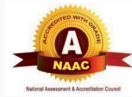
Explanation: Fiber optics transmit data using light pulses.

8. Wireless transmission media allow data to travel_____.

- A. only through physical wires
- B. through the air or space without wires
- C. only underground cables
- D. only inside buildings

Answer: B. through the air or space without wires

Explanation: Wireless media transmit signals without physical connectors.



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9. Which of the following is NOT a transmission medium?

- A. Satellite link
- B. Ethernet cable
- C. Operating system
- D. Infrared signals

Answer: C. Operating system

Explanation: The OS is software, not a medium for signal transmission.

10. What defines a wired transmission medium?

- A. Any medium that uses radio waves
- B. Any physical link that carries data signals
- C. A medium that transmits data without cables
- D. A type of software protocol

Answer: B. Any physical link that carries data signals

Explanation: Wired media use physical cables to transmit signals.



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11. Which of the following is NOT a wired transmission medium?

- A. Twisted pair cable
- B. Fiber optic cable
- C. Coaxial cable
- D. Wi-Fi

Answer: D. Wi-Fi

Explanation: Wi-Fi is a wireless transmission medium, not wired.

12. Which wired transmission medium uses light to carry data?

- A. Twisted pair cable
- B. Coaxial cable
- C. Fiber optic cable
- D. Ethernet cable

Answer: C. Fiber optic cable

Explanation: Fiber optic cables use light signals to transmit data.



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13. What is the most common wired medium used in home networks?

- A. Fiber optic
- B. Twisted pair cable (Ethernet)
- C. Coaxial cable
- D. Satellite link

Answer: B. Twisted pair cable (Ethernet)

Explanation: Ethernet cables are twisted pair cables widely used for home and office networks.

14. Which characteristic is typical for wired transmission media?

- A. Data travels through the air
- B. Uses physical cables to connect devices
- C. No physical connection is needed
- D. Transmits data using radio signals

Answer: B. Uses physical cables to connect devices

Explanation: Wired media require physical cables.



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15. Coaxial cable is an example of ____ type of transmission medium.

- A. Wireless
- B. Wired
- C. Infrared
- D. Satellite

Answer: B. Wired

Explanation: Coaxial cables are physical cables used to transmit data.

16. Which wired transmission medium is commonly used by cable TV companies?

- A. Twisted pair cable
- B. Fiber optic cable
- C. Coaxial cable
- D. Satellite link

Answer: C. Coaxial cable

Explanation: Coaxial cables are widely used for cable television distribution.



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17. What are twisted pair cables primarily made of?

- A. Aluminum wires
- B. Copper wires
- C. Fiber optic strands
- D. Plastic fibers

Answer: B. Copper wires

Explanation: Twisted pair cables use copper wires twisted together to transmit signals.

18. Twisted pair cables are commonly used in _____.

- A. Satellite communication
- B. Ethernet networks and telephone lines
- C. Fiber optic networks
- D. Wireless communication

Answer: B. Ethernet networks and telephone lines

Explanation: Twisted pair cables are widely used in LANs and telephone wiring.



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19. What is the purpose of twisting the wires in a twisted pair cable?

- A. To increase cable length
- B. To reduce electromagnetic interference
- C. To simplify cable manufacturing
- D. To increase bandwidth

Answer: B. To reduce electromagnetic interference

Explanation: Twisting cancels out noise and reduces interference.

20. What does UTP stand for?

- A. Unshielded Twisted Pair
- B. Universal Twisted Pair
- C. Uninterruptible Transmission Path
- D. Ultra Twisted Pair

Answer: A. Unshielded Twisted Pair

Explanation: UTP cables do not have additional shielding around the twisted pairs.



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21. What is the main difference between UTP and STP cables?

- A. UTP uses fiber optics, STP uses copper
- B. STP has a shielding layer, UTP does not
- C. UTP is used in wireless, STP in wired networks
- D. STP is less expensive than UTP

Answer: B. STP has a shielding layer, UTP does not

Explanation: Shielded twisted pair cables have extra shielding to reduce interference further.

22. Which twisted pair cable type is generally less expensive?

- A. Shielded Twisted Pair (STP)
- B. Unshielded Twisted Pair (UTP)
- C. Fiber optic cable
- D. Coaxial cable

Answer: B. Unshielded Twisted Pair (UTP)

Explanation: UTP cables cost less due to simpler construction.



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23. Why are twisted pair cables widely used in telephone lines?

- A. Because they use light signals
- B. They provide high security
- C. They are inexpensive and effective at noise reduction
- D. They can carry video signals only

Answer: C. They are inexpensive and effective at noise reduction

Explanation: Twisted pairs balance cost and performance, ideal for phone lines.

24. What kind of signal do twisted pair cables transmit?

- A. Digital and analog electrical signals
- B. Light signals
- C. Radio waves
- D. Sound waves

Answer: A. Digital and analog electrical signals

Explanation: Copper twisted pairs carry electrical signals used in both analog and digital communication.



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25. Which twisted pair cable is usually preferred in environments with high electromagnetic interference?

- A. Unshielded Twisted Pair (UTP)
- B. Shielded Twisted Pair (STP)
- C. Fiber optic
- D. Coaxial cable

Answer: B. Shielded Twisted Pair (STP)

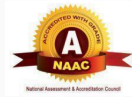
Explanation: STP cables have shielding to protect against interference.

26. What is the core conductor material of a coaxial cable?

- A. Aluminum
- B. Copper
- C. Fiber optic strands
- D. Plastic

Answer: B. Copper

Explanation: Coaxial cables have a central copper conductor for signal transmission.



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27. Which layer surrounds the central conductor in a coaxial cable?

- A. Outer insulating layer
- B. Metallic shield
- C. Insulating layer
- D. Fiber optic sheath

Answer: C. Insulating layer

Explanation: The conductor is surrounded by an insulating layer to separate it from the shield.

28. What provides shielding in a coaxial cable?

- A. Light-reflective coating
- B. Metallic shield
- C. Twisted pairs
- D. Fiber optic layer

Answer: B. Metallic shield

Explanation: The metallic shield protects the cable from electromagnetic interference.



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29. Compared to twisted pair cables, coaxial cables have_____.

- A. Less shielding
- B. Better shielding
- C. No shielding
- D. The same shielding

Answer: B. Better shielding

Explanation: Coaxial cables have superior shielding to reduce interference.

30. Coaxial cables are used to carry signals of_____.

- A. Lower frequencies only
- B. Higher frequencies and longer distances
- C. Only digital signals
- D. Only analog signals

Answer: B. Higher frequencies and longer distances

Explanation: Coax cables support high-frequency signals over long distances.



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31. Which of these is a common use of coaxial cables?

- A. Wi-Fi connections
- B. Cable television networks
- C. Bluetooth communication
- D. Infrared remote controls

Answer: B. Cable television networks

Explanation: Coaxial cables are widely used in cable TV.

32. Broadband internet connections often use _____.

- A. Twisted pair cable
- B. Fiber optic cable
- C. Coaxial cable
- D. Satellite link

Answer: C. Coaxial cable

Explanation: Many broadband providers use coaxial cables for high-speed internet.



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33. What material is used to make optical fiber cables?

- A. Copper wires
- B. Thin glass or plastic threads
- C. Aluminum wires
- D. Steel strands

Answer: B. Thin glass or plastic threads

Explanation: Optical fibers are made of very thin strands of glass or plastic.

34. How do optical fiber cables transmit data?

- A. Using electrical signals
- B. Using light waves
- C. Using radio waves
- D. Using sound waves

Answer: B. Using light waves

Explanation: Optical fibers use light to carry information.



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35. Optical fiber cables are commonly used in_____.

- A. Traditional telephone lines
- B. Telecommunications networks and high-speed internet
- C. Wireless networks
- D. Coaxial cable TV connections

Answer: B. Telecommunications networks and high-speed internet

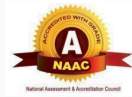
Explanation: Optical fibers support fast, long-distance communication.

36. Which of the following is a characteristic of optical fiber cables?

- A. Heavy and bulky
- B. Lightweight
- C. Prone to electromagnetic interference
- D. Low bandwidth

Answer: B. Lightweight

Explanation: Optical fibers are thin and light compared to copper cables.



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37. Compared to other cables, optical fibers offer_____.

- A. Lower bandwidth
- B. Higher bandwidth
- C. Slower data transfer rates
- D. More electrical interference

Answer: B. Higher bandwidth

Explanation: Optical fibers support very high data rates.

38. One disadvantage of optical fiber cables is that they are_____.

- A. Inexpensive
- B. Easy to install
- C. Expensive
- D. Heavy

Answer: C. Expensive

Explanation: Optical fibers cost more than copper cables.



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39. Optical fiber cables typically transmit data in _____.

- A. Bidirectional (both ways simultaneously)
- B. Unidirectional (one way)
- C. Random direction
- D. Circular direction

Answer: B. Unidirectional (one way)

Explanation: Fiber optic transmission is usually unidirectional; two fibers are needed for two-way communication.

40. In wireless communication, information travels through_____.

- A. Physical cables
- B. Electromagnetic signals through the air
- C. Fiber optic cables
- D. Satellite dishes only

Answer: B. Electromagnetic signals through the air

Explanation: Wireless communication transmits data using electromagnetic waves without physical cables.



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41. Which of the following is NOT a wireless communication technology?

- A. Bluetooth
- B. WiFi
- C. Ethernet
- D. Cellular networks

Answer: C. Ethernet

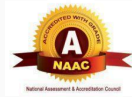
Explanation: Ethernet uses physical cables, so it is not wireless.

42. Bluetooth is typically used for_____.

- A. Long-range internet access
- B. Short-range communication between devices
- C. Satellite communication
- D. Broadcasting television signals

Answer: B. Short-range communication between devices

Explanation: Bluetooth connects devices over short distances (a few meters).



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43. WiFi is mainly used for_____.

- A. Connecting devices within a local area network wirelessly
- B. Long-distance satellite communication
- C. Wired telephone lines
- D. Fiber optic internet

Answer: A. Connecting devices within a local area network wirelessly

Explanation: WiFi provides wireless local area network (WLAN) access.

44. Which medium does wireless communication use?

- A. Copper cables
- B. Optical fibers
- C. Air or space
- D. Coaxial cables

Answer: C. Air or space

Explanation: Wireless signals travel through air or space without cables.



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45. Which wireless technology is best suited for connecting peripherals like headphones and keyboards?

- A. WiFi
- B. Bluetooth
- C. Satellite
- D. Ethernet

Answer: B. Bluetooth

Explanation: Bluetooth is designed for short-range device connectivity.

46. Which wireless technology allows multiple devices to connect to the internet within a building?

- A. Bluetooth
- B. WiFi
- C. Fiber optic
- D. DSL

Answer: B. WiFi

Explanation: WiFi creates a wireless network for internet access in homes and offices.



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47. Wireless communication signals are a form of___.

- A. Electrical current through wires
- B. Electromagnetic waves
- C. Acoustic waves
- D. Light only

Answer: B. Electromagnetic waves

Explanation: Wireless data is transmitted via electromagnetic signals like radio waves.

48. What is the frequency range of radio waves?

- A. 3 Hz to 1 kHz
- B. 3 kHz to 1 GHz
- C. 1 GHz to 300 GHz
- D. 300 GHz to 1 THz

Answer: B. 3 kHz to 1 GHz

Explanation: Radio waves operate between 3 kilohertz and 1 gigahertz.



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49. What does it mean when radio waves are described as omnidirectional?

- A. They travel in a single straight line
- B. They spread out in all directions equally
- C. They do not spread at all
- D. They reflect only off metallic surfaces

Answer: B. They spread out in all directions equally

Explanation: Omnidirectional waves radiate equally in every direction.

50. Which of the following devices uses electromagnetic waves in this frequency range? (3 kHz to 1 GHz)

- A. Fiber optic cables
- B. AM/FM radios
- C. Infrared remote controls
- D. Satellite dishes only

Answer: B. AM/FM radios

Explanation: AM and FM radios operate within this frequency range. (3 kHz to 1 GHz)



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51. Which of the following is a characteristic of radio waves?

- A. Require line-of-sight only
- B. Cannot penetrate walls
- C. Can travel long distances and penetrate walls
- D. Highly directional

Answer: C. Can travel long distances and penetrate walls

Explanation: Radio waves can penetrate obstacles and travel far distances.

52. What type of communication do radio waves in this range support? (3 kHz to 1 GHz)

- A. Point-to-point only
- B. Broadcast and omnidirectional communication
- C. Wired communication
- D. Optical communication

Answer: B. Broadcast and omnidirectional communication

Explanation: Radio waves can broadcast signals widely in all directions.



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53. Which device uses radio waves to allow mobile communication?

- A. Cell phones
- B. Fiber optic modem
- C. Ethernet cable
- D. Satellite phone only

Answer: A. Cell phones

Explanation: Mobile phones use radio waves within this frequency range.

54. Walkie-talkies operate in which frequency range?

- A. Below 3 kHz
- B. 3 kHz to 1 GHz
- C. 1 GHz to 300 GHz
- D. Above 300 GHz

Answer: B. 3 kHz to 1 GHz

Explanation: Walkie-talkies use radio waves typically within this frequency band.



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55. What is the frequency range of microwaves?

- A. 3 kHz to 1 GHz
- B. 1 GHz to 300 GHz
- C. 300 GHz to 1 THz
- D. Below 3 kHz

Answer: B. 1 GHz to 300 GHz

Explanation: Microwaves operate between 1 gigahertz and 300 gigahertz.

56. A key characteristic of microwaves is that they require_____.

- A. Physical cables
- B. Line-of-sight communication
- C. No direct path between sender and receiver
- D. Water as a transmission medium

Answer: B. Line-of-sight communication

Explanation: Microwaves typically need a clear path between transmitter and receiver.



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57. Microwaves are commonly used for which type of communication?

- A. Broadcast radio
- B. Point-to-point communication
- C. Wired telephone lines
- D. Fiber optic networks

Answer: B. Point-to-point communication

Explanation: Microwaves are often used in direct, focused communication links.

58. Which of the following devices uses microwave frequencies?

- A. AM/FM radios
- B. Mobile phones
- C. Bluetooth devices
- D. Ethernet cables

Answer: B. Mobile phones

Explanation: Mobile phone signals commonly use microwave frequencies.



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59. Microwave towers are used mainly for ____.

- A. Broadcasting radio signals omnidirectionally
- B. Long-distance point-to-point communication
- C. Wired internet connections
- D. Underwater communication

Answer: B. Long-distance point-to-point communication

Explanation: Microwave towers relay signals directly between two points.

60. Which of the following technologies does NOT typically use microwaves?

- A. Mobile phones
- B. Satellite links
- C. Walkie-talkies
- D. Radar

Answer: C. Walkie-talkies

Explanation: Walkie-talkies usually operate below 1 GHz in radio wave frequencies.



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61. What is the frequency range of infrared (IR) waves?

- A. 1 GHz to 300 GHz
- B. 300 GHz to 400 THz
- C. 3 kHz to 1 GHz
- D. Above 400 THz

Answer: B. 300 GHz to 400 THz

Explanation: Infrared waves occupy this range, between microwaves and visible light.

62. Infrared waves are best described as____.

- A. Long-range and omnidirectional
- B. Short-range and directional
- C. Able to penetrate walls
- D. Used only in fiber optic communication

Answer: B. Short-range and directional

Explanation: IR signals travel short distances and usually require a direct line of sight.



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63. Which of these devices commonly uses infrared communication?

- A. Remote controls
- B. Walkie-talkies
- C. Cell phones
- D. Satellite links

Answer: A. Remote controls

Explanation: Remote controls use IR signals to send commands to devices.

64. Infrared waves are commonly used for____.

- A. Wireless keyboards and mice
- B. FM radio broadcasting
- C. Long-distance mobile communication
- D. Underwater communication

Answer: A. Wireless keyboards and mice

Explanation: These devices often use IR to communicate short distances.



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65. Bluetooth is a type of ____.

- A. Wired communication
- B. Short-range radio communication
- C. Satellite communication
- D. Infrared communication

Answer: B. Short-range radio communication

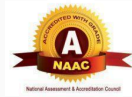
Explanation: Bluetooth uses radio waves for close-range wireless data exchange.

66. What is the typical maximum range of Bluetooth devices?

- A. 1 meter
- B. 10 meters
- C. 100 meters
- D. 1 kilometer

Answer: B. 10 meters

Explanation: Bluetooth commonly works effectively within about 10 meters.



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67. Which of the following devices commonly use Bluetooth?

- A. Wired headphones
- B. Wireless headsets
- C. Satellite phones
- D. Ethernet cables

Answer: B. Wireless headsets

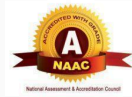
Explanation: Bluetooth enables wireless connection to headsets.

68. Bluetooth technology is commonly found in____.

- A. Desktop printers only
- B. IoT devices like smart home gadgets
- C. Coaxial cables
- D. Wired telephone systems

Answer: B. IoT devices like smart home gadgets

Explanation: Many IoT devices use Bluetooth for communication.



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69. Which characteristic best describes Bluetooth communication?

- A. Requires physical cables
- B. Short-range wireless connection
- C. Long-range satellite communication
- D. Optical fiber communication

Answer: B. Short-range wireless connection

Explanation: Bluetooth is designed for close-proximity wireless links.

70. What is the limitation of Bluetooth?

- A. It can only connect to one device at a time.
- B. It has a limited range (about 10 meters).
- C. It requires a physical cable.
- D. It cannot be used indoors.

Answer: B. Has a limited range (about 10 meters)

Explanation: Bluetooth is designed for short distances and can be blocked by walls.