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.

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

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)

Name of the Bundle	Proficient Bundle V1	Subject	Networking V1
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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.

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

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.

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

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.

Name of the Bundle	Proficient Bundle V1	Subject	Networking V1
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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.