

UNIT-2: PHYSICAL LAYER

Multiple Choice Questions

1.The Physical Layer is responsible for:

- a) Routing packets
- b) Error control
- c) Transmission of bits
- d) Encryption

Ans: c) Transmission of bits

2.Which layer is the lowest layer in the OSI model?

- a) Data Link
- b) Network
- c) Physical
- d) Transport

Ans: c) Physical

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

- a) Radio Waves
- b) Microwaves
- c) Optical Fiber
- d) Infrared

Ans: c) Optical Fiber

4.Twisted pair cable consists of:

- a) Two insulated copper wires
- b) Optical fibers
- c) Aluminum wires
- d) Radio antennas

Ans: a) Two insulated copper wires

5.Which transmission medium offers the highest bandwidth?

- a) Twisted Pair
- b) Coaxial Cable
- c) Optical Fiber
- d) Telephone Line



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Ans: c) Optical Fiber

6.Coaxial cable contains:

- a) Optical fiber core
- b) Central conductor
- c) Satellite dish
- d) Antenna

Ans: b) Central conductor

7.Optical fiber transmits data using:

- a) Sound waves
- b) Electrical signals
- c) Light signals
- d) Radio signals

Ans: c) Light signals

8.Which medium is immune to electromagnetic interference?

- a) Twisted Pair
- b) Coaxial Cable
- c) Optical Fiber
- d) Telephone Cable

Ans: c) Optical Fiber

9.Which of the following is an unguided medium?

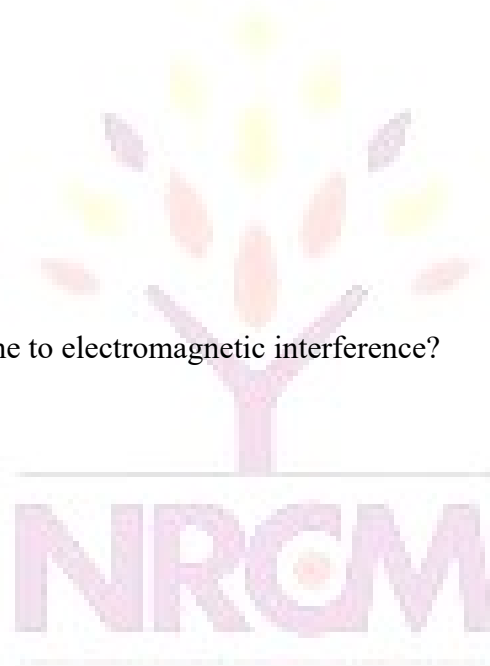
- a) Twisted Pair
- b) Coaxial Cable
- c) Optical Fiber
- d) Radio Waves

Ans: d) Radio Waves

10.Microwave communication requires:

- a) Optical Cable
- b) Copper Wire
- c) Line of Sight
- d) Switch

Ans: c) Line of Sight



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11.Satellite communication mainly uses:

- a) Infrared Waves
- b) Radio Waves
- c) Microwaves
- d) Sound Waves

Ans: c) Microwaves

12.Bandwidth is measured in:

- a) Volts
- b) Amperes
- c) Hertz
- d) Ohms

Ans: c) Hertz

13.Nyquist theorem is applicable to:

- a) Noisy Channels
- b) Noiseless Channels
- c) Wireless Channels
- d) Optical Channels

Ans: b) Noiseless Channels

14.Shannon theorem determines:

- a) Error Detection
- b) Channel Capacity
- c) Routing
- d) Framing

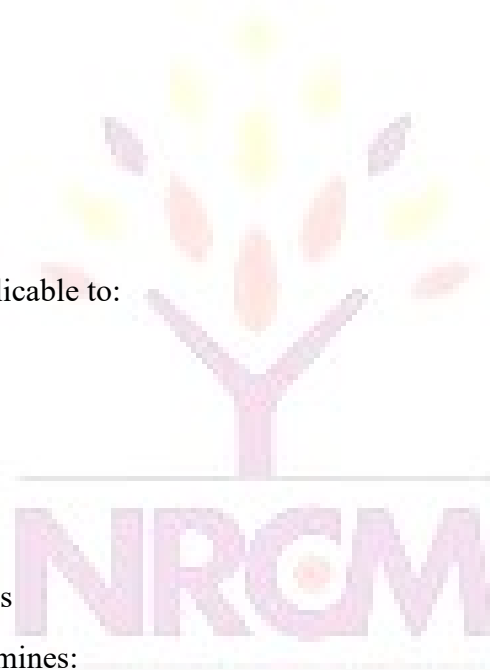
Ans: b) Channel Capacity

15.A modem is used for:

- a) Routing
- b) Switching
- c) Modulation and Demodulation
- d) Encryption

Ans: c) Modulation and Demodulation

16.Which signal has discrete values?



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- a) Analog Signal
- b) Digital Signal
- c) Radio Signal
- d) Optical Signal

Ans: b) Digital Signal

17.Infrared transmission is mainly used for:

- a) Satellite Communication
- b) Remote Controls
- c) WAN Communication
- d) Routing

Ans: b) Remote Controls

18.The data rate is usually measured in:

- a) Bits per Second
- b) Volts per Second
- c) Amperes per Second
- d) Hertz per Second

Ans: a) Bits per Second

19.Which cable is most commonly used in telephone networks?

- a) Optical Fiber
- b) Coaxial Cable
- c) Twisted Pair Cable
- d) Microwave Link

Ans: c) Twisted Pair Cable

20.Fiber optic communication is based on:

- a) Reflection of Light
- b) Electrical Current
- c) Sound Propagation
- d) Magnetic Waves

Ans: a) Reflection of Light



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Fill in the Blanks

1. The Physical Layer is the _____ layer of the OSI model.
Ans: First
2. The Physical Layer is responsible for transmitting _____.
Ans: Bits
3. A communication path between two devices is called a transmission _____.
Ans: Medium
4. Twisted pair cable consists of two insulated _____ wires.
Ans: Copper
5. _____ cable provides better shielding than twisted pair cable.
Ans: Coaxial
6. Optical fiber transmits data using _____ signals.
Ans: Light
7. Fiber optic cable is immune to _____ interference.
Ans: Electromagnetic
8. Wireless communication uses _____ waves.
Ans: Radio
9. Satellite communication mainly uses _____ waves.
Ans: Microwave
10. The capacity of a communication channel is measured in _____.
Ans: Bandwidth
11. Bandwidth is commonly measured in _____.
Ans: Hertz
12. The maximum data rate of a channel is determined by _____ theorem.
Ans: Shannon
13. Nyquist theorem applies to _____ channels.
Ans: Noiseless
14. Guided media includes twisted pair, coaxial cable, and _____ fiber.
Ans: Optical
15. Unguided media includes radio, microwave, and _____ transmission.
Ans: Infrared
16. Signals can be either analog or _____.
Ans: Digital

17. A modem converts digital signals into _____ signals.

Ans: Analog

18. Fiber optics provide very high _____.

Ans: Bandwidth

19. Microwave transmission requires a clear line of _____.

Ans: Sight

20. Data transmission speed is measured in bits per _____.

Ans: Second



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