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| PAPER 1  IT IS A ICE TASK 1 AND 2 |
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* 1. A
  2. B
  3. B
  4. A,C
  5. C
  6. A,C,E
  7. D
  8. C
  9. J
  10. E
  11. I
  12. H
  13. G
  14. D
  15. B
  16. F

A logical connection is a nonphysical connection between sender and receiver that allows an exchange of commands and responses. Physical connection is the actual connection between sender and receiver at the physical layer where the digital content of a message (actual ls and Os) is transmitted.

Application, Transport, Network, Network Access, and Physical.

* 1. 🡪It is similar to the category 5 which typically use of Lan. 🡪The maximum data transfer rate 250 Mbps per pair (125 MHz). 🡪The maximum transmission range 100 meters. 🡪The advantages were, easy to install and inexpensive. 🡪The disadvantage were, Security, noise and obsolete.
  2. 🡪Noise problems with analog signals. 🡪Potentially wastes bandwidth. 🡪Limited by frequency ranges.

Advantages: 🡪 It is more safe and secure to keep information on the server. 🡪It is more safe and secure to keep information on the server.

🡪Local area network devices communicate directly at very high rates of speed based on LAN model that they install.

🡪 It is a collaboration of resource.

Disadvantages: 🡪 It is really difficult and expensive to install a LAN.

🡪if somehow the server fails, all devices may be heavily impacted.

🡪 Sharing a data from external source not always secure.

🡪The LAN is made ln limited distance .

* 1. Each input source is assigned a different colored laser, and the many optical signals from the input sources are combined so that they can be amplified as a group and carried through a single fiber. It's worth noting that each signal carried on the fiber can be transferred at a different pace than the other signals due to the qualities of the signals and glass fiber, as well as the nature of light itself. This indicates that a single fiber-optic line can handle rates of 51.84 Mbps, 155.52 Mbps, 622.08 Mbps, and 2.488 Gbps at the same time (which, incidentally, are multiples of T-1 speeds and are defined as OC-1, OC-3, OC-12, and OC-48, the optical carrier specifications for high-speed fiber-optic lines).
  2. Computer networks are made up of two basic blocks: data and signals. All data carried through a channel can be analog or digital in nature. Data is transformed into a signal format that is compatible with the transmission channel. Signals, like data elements, can be analog or digital in nature.

Hence four possible combinations of data and signal are as follows.

• Analog data converted into analog signal form, for example Telephone.

• Digital data converted to analog signal form, for example modem.

• Analog data converted to digital signal form, for example codec.

• Digital data converted to digital signal form, for example digital transmitter.

* 1. A thin glass cable approxiamately a little thicker than a human hair, surrounded a plasting coating.It has ability transmit large amount of data at very high speed such as (100 gbps) and experience very low noise and not susceptible to the electromagnetic radiation.

Photo diode: A light source that is placed at the end of a fiber optic cable to produce the pulses of light that travels through cable.

Photo receptor: the device at the end of a fibre optic cable that accepts the pulses of light and converts back to the electical signals.

Advantage: The lack of significant noise is one of the biggest advantage of the fibre optical cable.

Disadvantage: 🡪The light source and photo receptor arrangment works, light pulses can travel in one directional only.

🡪It is more expensive compare to the twisted pair.

Photonic Fiber: it is a type of fibre optic cable with long continous air tunnels through the glass through the laser that is fired from one end to the other.