
Assignment 2: Chapter 1 (Part 2)

Question 1

Considering the following scenarios:

- There are 10 labs in UB06, each having 40 PCs that can communicate with each other.
- PCs in BU01 can communicate with PCs at BRAC Centre (Both are in different networks).
- BRAC Center can communicate with BRAC CDM located at Rajendrapur.
- A number of fire stations located in a city are connected, so office staff can easily communicate with one another.

Match each of the above scenarios to an appropriate network type (LAN, WAN, MAN). Give reasons for your choice.

Question 2

Identify different topologies in the following computer network of hybrid topology.

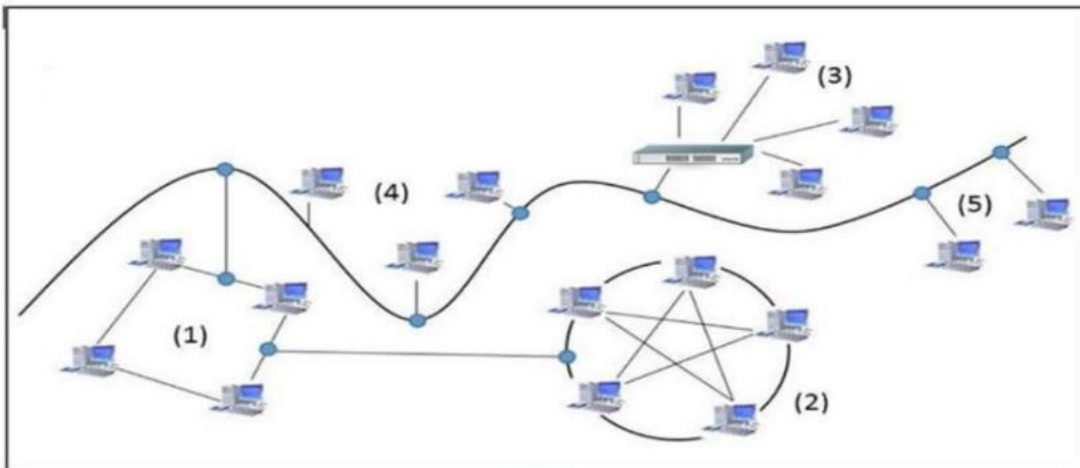


Figure 1 Hybrid Topology

Question 3

Suppose, a hospital has four buildings. Each building has an administration ward and a patient care ward. There are 3 nodes in each ward. Identify the topologies and draw the hybrid network **that satisfy the following criteria:**

- i. Each ward can communicate with each other as they are connected centrally. If one ward gets disconnected, the other ward remains active.
- ii. The devices in both wards use a central backbone line and are connected using multipoint connections only.
- iii. Dedicated point to point connection is used to connect buildings with each other.

Question 4

Suppose there are 4 buildings in BRACU's new campus. Buildings are connected using bus topology. Each building has 3 CSE Labs. Each Lab has 4 computers. The computers are connected using mesh topology but the Labs of a single building are connected using star topology. **Draw** the BRACU new campus hybrid topology. How many links will there be (links are using full-duplex transmission mode)?

Question 5

Suppose a university campus has four departments. Each department has a faculty area and a student area. Each area can communicate with each other as they are connected centrally using a switch. If one area gets disconnected, other areas remain active. The devices in both areas use a central backbone line and are connected using multipoint connections only. Finally, each department has connections with each other. **Identify** the topologies from the above scenario and **draw** the hybrid topology, assuming there are 3 nodes in each area. **Count** the total number of communication links in this hybrid topology.

Question 6

Write the differences among the four network architectures: WAN, MAN, LAN, and PAN. Make sure to provide examples of each.

Question 7

Write two examples of end-to-end and intermediary devices each.

Question 8

What are the two types of Software? Briefly explain both.

Question 9

Design a table representing Data Representation (all kinds of data that can be sent and received over the network) and their corresponding standard/file extensions.

Question 10

Which factors determine the effectiveness of a network system?