**Network Servers and Infrastructure**

**Assignment 2**

**Q1: Compare between the transmissions media as regarding the following metrics:**

* **Components**
* **Advantages**
* **Disadvantages**
* **Cost**

|  |  |  |  |
| --- | --- | --- | --- |
| Components | COPPER | OPTICAL FIBER | Wireless |
| Advantages | Cheap, high efficiency, low energy | High speed, Durable, long distances, larger bandwidth | Mobility Can used at anywhere in boundary, remote reconfiguration |
| Disadvantages | SLOW, Place is limited | Expensive, Place is limited, installation and maintenance is not as easy | May be affected by Weather and wall |
| Cost | Lower | Higher | Lower |

**Q2: Compare between the wired LAN devices as regarding the following metrics**

* **Functions**
* **Types**
* **Advantages**
* **Disadvantages**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Repeater | HUB | Switch |
| Functions | regenerate signal | connect multiple nodes to a single physical device | provide a unique network segment on each port |
| Types | Telephone repeater  Optical communications repeater  Radio repeater | Active  Passive  Intelligent | Modular switch, smart switch, LAN switch, managed switch, unmanaged switch |
| Advantages | Dos not increase network traffic, can connect different type of media,  No overhead processing | Low cost solution, having very less number of performance, can connect different types of media all at once with a central hub | Increases Capacity, Reduces Burden, Less frame collisions, More secure |
| Disadvantages | Cannot filter data, Cannot different network architecture, number of repeaters between ends should be limited | Cannot filter data, Extend collision domain, Cannot communicate fully duplex mode, cannot provide dedicated bandwidth for every device | They are more costly, Issues in traffic broadcasting, Defenseless |

**Q3: Explain the spanning tree protocol**

* **Loop resolution**
* **Address Learning**
* **Frame Forwarding**