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**DCAN202 Week 4 Tutorial – Data Communication and Networking**

**Answer the following questions:**

# **Q-1**

# What is the difference between half duplex and full duplex communications? List two examples each of simplex, half duplex, and full duplex connections.

Ans:

**Difference between Half-Duplex and Full-Duplex Communications:**

* **Half-Duplex Communication**: Allows data to be transmitted in both directions, but not at the same time. The transmission alternates between sending and receiving.
  + Example: Walkie-talkies, CB radios.
* **Full-Duplex Communication**: Allows data to be transmitted in both directions simultaneously, enabling both sending and receiving at the same time.
  + Example: Telephones, Internet communication.

**Examples of Simplex, Half-Duplex, and Full-Duplex Connections:**

* **Simplex**:
  1. Keyboard to computer
  2. Television broadcast
* **Half-Duplex**:
  1. Walkie-talkies
  2. CB radio communication
* **Full-Duplex**:
  1. Telephone system
  2. Mobile phone calls

**Q-2**

If I have a device that has a Universal Serial Bus 3.0 interface, but my computer only has a Universal Serial Bus 2.0 connector, is my device going to work? Explain.

Ans:

Device with a USB 3.0 interface will work with a USB 2.0 connector. However, the connection will operate at USB 2.0 speeds (up to 480 Mbps) instead of the higher speeds that USB 3.0 supports (up to 5 Gbps). USB standards are designed to be backward compatible, so the device will work, but it will be limited by the slower data transfer rate of the USB 2.0 interface​

**Q-3**

Learn about the Fundamental components of small business IT network from the video below:

<https://www.youtube.com/watch?v=yhUfRxLyL_M>

Now draw the network diagram below using any diagramming tools like “draw.io”, Lucid chart, “visual-paradigm.com” or any other software you prefer.

Diagram

Description automatically generated

*[Source: https://creately.com/diagram/example/g6m2xm6j1/Office+Network+Diagram+Template]*

You can learn how to draw a network diagram from the video below:

<https://www.youtube.com/watch?v=XbrOIGbYHHw&t=3s>

Attach your work with this document and submit to your Moodle link.