**Tutorial 1A: Introduction to Networks**

Q1. (a) Identify the **THREE (3)** categories of networks components and give **ONE (1)** example of each component. (6 marks)

| Component | Example |
|---|---|
| End devices | PC, Mobile phones |
| Intermediary devices | Network switch, router |
| Services | Email services, web hosting services |

(b) Identify the following network representation. (10 marks)

| Category | Network representation | Name of the network representation |
|---|---|---|
| (i) End devices (1m) | | (iv) Printer (1m) |
| | | (v) IP Phone (1m) |
| (ii) Intermediary devices (1m) | | (vi) LAN switch (1m) |
| | | (vii) Router (1m) |
| | | (viii) Wireless router (1m) |
| (iii) Network Media (1m) | | (ix) Wireless media (1m) |
| | | (x) WAN media (1m) |

(c) Identify the type of network media, give each an example and the relevant encoding type. (9 marks)

| Type of Network Media | Example | Encoding |
|---|---|---|
| Copper cable | Twisted pair cable as LAN | Electric impulses |
| Fiber optic | Glass or plastic fibers in vinyl coating for long runs in LAN. | Light pulses |
| Wireless | Connect local users through air | Electromagnetic waves |

*updated by Ts. Carolyn Ting Hie Choon on 25.5.20*

Q2. (a) Distinguish between a physical topology and a logical topology. (4 marks)

Physical topology identifies the physical location of intermediary devices, configured ports and cable installation whereas logical topology identifies the devices, ports and IP addressing scheme.

(b) Distinguish between Intranet and Extranet. (4 marks)

Intranet refers to a private connection of LANs and WANs of an organization that are designed to be accessible by its personnels and authorized individuals only. Extranet is similar to Intranet but it provides a secure and access to individuals outside the organization who needs company data.

(c) Differentiate between Local Area Network (LAN) and Wide Area Network (WAN). (8 marks)

| LAN | WAN |
|---|---|
| A computer network that interconnects end devices within a limited geographical area. | A computer network that interconnects LANs across a wide geographical area such as cities, states, countries and continents. |
| Provides high speed bandwidth to internal end devices and intermediary devices. | Typically provides slower speed links between LANs. |