**AACS2034 Fundamentals of Computer Networks** 

**Tutorial 1A: Introduction to Networks**

**Question 1**

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

| **Component** | **Example** |
| --- | --- |
| Device(end devices or host ) | computer /VoIP phone |
| Media | Network Access Devices (switch) |
| Services | Email hosting & Web hosting |

(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 | Unshielded Twisted Pair (UTP) | Electrical impulses |
| Fiber Optic | Fibre optic cable | Light pulses |
| Wireless | Connects local users through the air | Electromagnetic waves |

**Question 2.**

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

Physical topology illustrates the physical location of intermediary devices, cable installations and configured ports while logical topology illustrates the presences of devices, ports and addressing scheme

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

Intranet is used to refer to a private connection of LANs and WANs that belongs to an organization and it is designed to be accessible only by the organization's members, employees, or others with authorization. Intranets are basically an internet which is usually only accessible from within the organization.

Extranet is the network area where people or corporate partners external to the company access data. An organization may use an extranet to provide secure and safe access to individuals who work for different organizations, but require company data.

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

| **LAN** | **WAN** |
| --- | --- |
| LAN interconnects end-devices in a network | WAN interconnects LANs in a network |
| LAN covers a small geographical area | WAN covers a wide geographical area |