



UNIVERSITY OF MORATUWA
Faculty of Information Technology
B.Sc. (Hons) in Information Technology
Level 1 Semester 2
IN 1500 – Data Communication
Assignment 02

Answer all questions.

Question 01

1. What are the types of Network Topologies? Discuss the advantages and disadvantages of these technologies. *[5 Marks]*
2. What is a protocol? *[5 Marks]*
3. Briefly discuss the communication protocol used in Ethernet technology. *[5 Marks]*
4. Describe the OSI layer and TCP/IP Layer Model and its functions. *[5 Marks]*
5. Briefly describe the types of Computer Network. *[5 Marks]*

Question 02

1.
 - a. Briefly explain Public IP and Privates IPs used in an Organization with suitable examples. *[5 Marks]*
 - b. Distinguish between Dynamic Host Configuration Protocol (DHCP) Method and Static method used when configuration of IPs in an organization. *[6 Marks]*
 - c. Explain “What is Domain Name Server (DNS)?” by giving two (02) examples. *[6 Marks]*
 - d. Briefly explain the Gateway, and Firewall used in Computer Networks. *[8 Marks]*

2. You are asked to build a Network for the IT faculty. IT Faculty consists of 4 stories. Number of employees in each Departments given bellow.

Information Technology	-	75
Computational Mathematics	-	25
Interdisciplinary Department	-	15

- a. What are the equipments you need to build-up the network and briefly explain why you have chosen these equipments?

[10 Marks]

- b. If 194.248.11.0/24 Network ID is given for the Faculty then find Network ID for each department and range of host address and Subnet Mask. Draw a Network diagram.

[15 Marks]

Question 03

1. List down the Interment Providers in Sri Lanka.

[5 Marks]

2. Briefly describe the difference between 4G and 5G technology.

[5 Marks]

3. What are the main types of Wireless Technologies?

[5 Marks]

4. Briefly explain the difficulties you may face when you are connecting to the Wide Area Network (WAN).

[5 Marks]

5. Briefly explain the types of networking and internetworking devices.

[5 Marks]