LAB TEST

Course	: BIT107 Data Communications and Networking
Program(s)	: Bachelor of Information Technology (Hons)
	: Bachelor of Information Technology (Hons) Data Analytics
Weightage	: 15%
Time	: 2 hours
Student Name	: _____
Student ID	: _____

Course Learning Outcomes Covered:

CLO2: Build some virtual networks successfully based on the given instructions

Instructions:

i. Answer all questions using CISCO packet tracer.

ii. Create a folder in the desktop with your own student ID as the folder name.

iii. Make sure you save your works frequently in order to avoid any unforeseen case.

iv. Zip the folder and then submit the zip file through the link provided in LMS.

Question 1 (22 marks):

i. Open CISCO Packet Tracer and save it as “Question1” in the previous folder.

ii. In the CISCO Packet Tracer, create a network showing the **Bus Topology** concept.

iii. This network with Bus Topology concept can **ONLY** contains 4 switches, 6 PCs, 1 Server, 1 router, and cables used for connections purpose.

iv. The server is used as a web server with a domain name assigned to it called “datatest.com”.

v. The router is used as the DHCP service provider for the rest of PC in the same network.

vi. Configure server and router so that all PCs can get their own unique dynamic IP address and ping to each other successfully. *(It is up to the students on how to configure the server and router, no restriction)*

vii. Make sure all PC can open the default web page in the server through domain name.

Question 2 (22 marks):

i. Open CISCO Packet Tracer and save it as “Question2” in the previous folder.

ii. In the CISCO Packet Tracer, create a network showing the **Ring Topology** concept.

iii. This network with Ring Topology concept can **ONLY** contains 6 switches, 5 PCs, 1 Server, and cables used for connections purpose.

iv. The server is used as the DHCP service provider for the rest of PC in the same network.

v. The server is used as a FTP server where all PCs can download and upload file(s) to this server in this LAN.

Question 3 (40 marks):

i. Open CISCO Packet Tracer and save it as “Question3” in the previous folder.

ii. In the Packet Tracer, create a network showing a **Hybrid Topology** concept which **MUST BE** the combination of **Bus Topology** and **Ring Topology**.

iii. Students need to think on how to link all topologies by using the devices given in Question 1, and Question 2 **ONLY.** Make sure all PCs able to ping to each other successfully. *(All PCs in this Question 3 can only retrieve their own IP address from their own LAN server, **IGNORE ALL** configuration settings mentioned in previous questions)*

iv. Set up a Domain Name Service (DNS) in the server of Bus Topology. This server in Bus Topology contains “abcmail.com” which belongs to the web server in Bus Topology itself and “defmail.com” which belongs to the web server in Ring Topology.

v. Create a web page in the server of Ring Topology by using the codes below:

<html>
<head><title>Lab Test</title></head>
<body>
I like this data communication subject so much
</body>
</html>

vi. All PC in Bus Topology have their own email account in the server of Bus Topology.

vii. All PC in Ring Topology have their own email account in the server of Ring Topology.

viii. Make sure all PC able to send and reply email to each other in this Hybrid Topology network.

Question 4 (16 marks):

i. Open CISCO Packet Tracer and save it as “Question4” in the previous folder.

ii. Create a network which contains 3 LANs (subnets) and 6 gateways by using any devices you like. Make sure all end devices able to ping to each other successfully.