



UNIVERSITY COLLEGE TATI (UC TATI)

FINAL EXAMINATION QUESTION BOOKLET	
COURSE CODE	: DNT 1014
COURSE	: INTRODUCTION TO NETWORKS
SEMESTER/SESSION	: 1 – 2023/2024
DURATION	: 3 HOURS

Instructions:

1. This booklet contains 5 questions. Answer **ALL** questions.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. If in doubt, raise your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 4 PRINTED PAGES INCLUDING COVER PAGE

INTRODUCTION TO NETWORKS (DNT 1014)

QUESTION 1

- a) State **FIVE (5)** intermediary devices. (5 marks)
- b) Discuss **FIVE (5)** networking technologies today. (10 marks)

QUESTION 2

- a) Explain the process of communication with diagram included the seven layers of OSI. (5 marks)
- b) Illustrate the frame process in layer 2. (4 marks)
- c) Read the scenario: As an Internet user you have many choices in subscribing the package of internet. Now, there are many ISP offer their product to consumer. As an internet user you need to make a comparison study to get the best choice. Thus, you need to study any ISP and do the following task:
 - i. Explain the ISP and internet package selected. (2 marks)
 - ii. Benefits of ISP or internet package selected. (2 marks)
 - iii. Cost or monthly bills consumed for the package. (2 marks)
 - iv. List of devices involved with model and cost. (4 marks)
 - v. Sketch the topology to show the connection between devices. (4 marks)

INTRODUCTION TO NETWORKS (DNT 1014)

QUESTION 3

- a) Convert an IP address given below into binary numbers.
- i) 192.168.5.128 (2 marks)
 - ii) 10.0.0.254 (2 marks)
 - iii) 172.16.50.45 (2 marks)
 - iv) 2001:ACAD:0012:0000:0000:0000:1234:FFFF (2 marks)
 - v) FF00::1 (2 marks)
- b) Determine the network and broadcast addresses and number of host bits and hosts for the given IPv4 addresses and prefixes in the following table. (12 marks)

Table 1: Network Address Table

IPv4 Address/Prefix	Network Address	Broadcast Address	Total Number of Host Bits	Total Number of Hosts
192.168.100.25/28				
172.30.10.130/30				
10.1.113.75/19				

- c) Abbreviate an IPv6 given below:
- i) 2001:00AB:0000:0000:0000:0000:ACAD:00FF (2 marks)
 - ii) 00FF:0000:0000:0012:0DEB:0056:0000:0000 (2 marks)
- d) Explain **THREE (3)** issues of IPv4 that are needed to migrate to IPv6. (6 marks)

INTRODUCTION TO NETWORKS (DNT 1014)

QUESTION 4

- a) Read the scenario: As a Network Consultant at Tanjung Network Resources, Kertih. The client is TATI University College request from your company to create the server for their company. Assume that TATI University College did not have server yet. The issue faced by the clients are web hosting, remote logging, file sharing and sending email. Discuss the servers that your client needs to be install. Then, sketch the network diagram related to the servers. (10 marks)
- b) A threat is something that may or may not happen but has the potential to cause serious damage. Threats can lead to attacks on computer systems, networks and more. Discover **ONE (1)** example of threat or attack use to harm the network system. (5 marks)

QUESTION 5

- a) Carry out the concept of redundancy in a small network. (4 marks)
- b) Sketch a diagram of small network that include end device, intermediary device and transmission medium. (5 marks)
- c) Discuss **THREE (3)** ways to mitigate the network attack. (6 marks)

-----END OF QUESTIONS-----