



UNIVERSITY COLLEGE TATI (UC TATI)

FINAL EXAMINATION QUESTION BOOKLET

COURSE CODE : DNT 1043

COURSE : NETWORK ESSENTIALS

SEMESTER/SESSION : 2 – 2024/2025

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

NETWORK ESSENTIALS (DNT1043)

QUESTION 1

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

QUESTION 2

- a) List **THREE (3)** examples of network medium and **TWO (2)** examples of end devices. (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 ISPs offering their product to consumers. 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)

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QUESTION 3

- a) Convert the following 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) FF00::1 (4 marks)
- b) Differentiate between static and dynamic of IP addressing.
- c) Explain the functions of Network Address Translation (NAT). (4 marks)
- d) Abbreviate an IPv6 given below: (4 marks)
- i) 2001:00AB:0000:0000:0000:0000:ACAD:00FF
 - ii) 00FF:0000:0000:0012:0DEB:0056:0000:0000 (2 marks)
- e) Explain **THREE (3)** classes of IPv4 address. (2 marks)
- f) Explain **THREE (3)** issues of IPv4 that are needed to migrate to IPv6. (6 marks)
- (4 marks)

QUESTION 4

- a) Read the scenario: As a Network Consultant at Tanjung Network Resources, Kertih. The client TATI University College requested your company to create the server for their company. Assume that TATI University College did not have a server yet. The issues faced by the clients are web hosting, remote logging, file sharing and sending email. Discuss the servers that your client needs to be installed. 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 the comparison between internal and external threats and justify which threat is most dangerous. (5 marks)

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QUESTION 5

- a) Compare Transmission Control Protocol (TCP) with User Datagram Protocol (UDP) in the transport layer. (4 marks)
- b) Sketch a diagram of a small network that includes an end device, intermediary device and transmission medium. (5 marks)
(6 marks)
- c) Discuss **THREE (3)** ways to mitigate the network attack.

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