



UNIVERSITY COLLEGE TATI (UC TATI)

FINAL EXAMINATION QUESTION BOOKLET

COURSE CODE : DNT 1013

COURSE : DATA COMMUNICATIONS

SEMESTER/SESSION : 1 – 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

QUESTION 1

- a) State **FIVE (5)** elements in Data Communications. (5 marks)
- b) Outline the function of **SEVEN (7)** seven layers in OSI Model. (7 marks)
- c) Give the function of Modulator and Demodulator and state **TWO (2)** devices that have Modulator and Demodulator. (4 marks)
- d) Compare between Guided Media and Unguided Media. (4 marks)

QUESTION 2

- a) Identify **FOUR (4)** types of network topology. (4 marks)
- b) Differentiate between Encapsulation Process and De-Encapsulation Process. (4 marks)
- c) State **THREE (3)** types of wireless transmission. (3 marks)
- d) Differentiate between Single Bit error and Burst Error. (4 marks)
- e) List **THREE (3)** types of wireless connection. (3 marks)
- f) Summarize the IPv6 given below. (2 marks)

2001:ACAD:0DB0:0000:0000:0000:07AB:0000

QUESTION 3

- a) List **FOUR (4)** types of error detection and correction techniques in data link layer. (4 marks)
- b) Distinguish between Ad Hoc Network and Infrastructure Network. (4 marks)
- c) Explain the functions of Network Address Translation (NAT). (2 marks)
- d) Identify **TWO (2)** types of IP address classes. (2 marks)
- e) Draw the structure of encoder and decoder in error detection. (4 marks)
- f) State **FOUR (4)** issues why Malaysia did not fully migrate from IPv4 to IPv6. (4 marks)

QUESTION 4

- a) Distinguish User Datagram Protocol (UDP) and Transmission Control Protocol (TCP). (4 marks)
- b) According to the Figure 1, list out the routing table for Router B, C, D, E and F from the path given using Open Shortest Path First (OSPF). (10 marks)

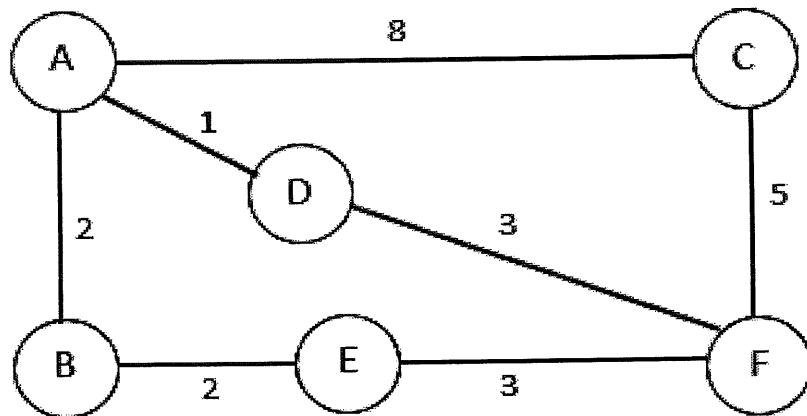


Figure 1: Routing Diagram

- c) List THREE (3) application that used User Datagram Protocol. (3 marks)
- d) Determine THREE (3) services of User Agent in E-mail system. (3 marks)
- e) State FIVE (5) protocols involved in Application Layer. (5 marks)

QUESTION 5

- a) Read the scenario: As an Internet user. You must subscribe Internet through an Internet Service Provider (ISP) to get the network connection. Illustrate your idea about ISP choose, benefits of ISP choose bills per month, package selected, topology used, devices involved with model and cost. Draw your topology to show the connection between devices. (10 marks)
- b) Draw the interaction between client and server with detail explanation. (5 marks)

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