



**PENINSULA**  
**COLLEGE**  
GEORGETOWN DK266-03(P)

## FINAL EXAMINATION

|                    |   |   |
|--------------------|---|---|
| Semester           | : | <b>SEPTEMBER 2025 SEMESTER</b>  |
| Programme Name     | : | <b>DIPLOMA IN COMPUTER SCIENCE<br/>DIPLOMA IN E-BUSINESS TECHNOLOGY</b> |
| Course Code & Name | : | <b>DCS1133 DEB2143 INTRODUCTION TO NETWORKING</b>                       |
| Duration           | : | <b>3 HOURS</b>  |

### INSTRUCTIONS TO CANDIDATES:

1. Please read the instructions given in the question paper **CAREFULLY**.
2. The question paper consists of **FOUR (4)** questions.
3. Answer **ALL** questions in the question paper.
4. Answers to the questions are to be written into the examination booklet.
5. Electronic dictionaries, lecture notes, files or any unauthorised materials except writing equipment are strictly prohibited.

This question paper must be submitted along with all used and/or unused rough papers and/ or graph papers (if any). Candidates are **NOT ALLOWED** to take any examination paper(s) used or unused out of the examination hall.

### WARNING:

The Examination Board of Peninsula College Georgetown regards cheating as a very serious offence and will not hesitate to mete out the appropriate punitive actions according to the severity of the offence committed, and in accordance with the clauses stipulated in the Students' Handbook, up to and including expulsion from Peninsula College Georgetown.

*(This booklet contains 3 printed pages including this page)*

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ALLOWED TO DO SO**

Answer **ALL** questions on the separate sheet provided.

**[100 marks]**

1. a) Describe **FOUR (4)** benefits of WLAN. (8 marks)
  
  - b) Distinguish the different between Independent Basic Service Set and Infrastructure Basic Service Set. (5 marks)
  
  - c) Explain the term station (STA) in the context of WLAN with appropriate examples of stations. (6 marks)
  
  - d) Discuss **THREE (3)** limitations of Bluetooth technology. (6 marks)
- Total: [25 marks]
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2. a) Circuit switching is one of the three main types of switching used in data communication networks.
    - i) Explain how circuit switching works. (4 marks)
    - ii) Discuss why it is sometimes referred to as a "lost-call system". (2 marks)
  
  - b) State **THREE (3)** factors that influence route selection in a packet-switched network. (3 marks)
  
  - c) Identify the differences between circuit switching and packet switching in terms of line usage, data flow, setup requirements, and bandwidth allocation. (8 marks)
  
  - d) Discuss **FOUR (4)** advantages of using Packet Switching. (8 marks)
- Total: [25 marks]
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3. a) Define protocol in context of computer networking. (2 marks)
  
  - b) Discuss any **THREE (3)** main functions of the Internet Protocol (IP) in data communication. (6 marks)
  
  - c) List **SEVEN (7)** protocols that operate at the Application Layer of the TCP/IP model, including their full names. (7 marks)

- d) Elaborate the main motivations that led to the development and adoption of IPv6 to replace IPv4. (10 marks)  
Total: [25 marks]

4. a) Explain the concept of network management. (4 marks)

b) According to the International Organization for Standardization (ISO), identify **FIVE (5)** key areas of network management. (5 marks)

c) Summarise **FIVE (5)** key considerations to take into account during network planning. (10 marks)

d) Identify **THREE (3)** elements that can be protected by a firewall. (6 mark)  
Total: [25 marks]

**- END OF QUESTIONS -**