



12 Pages

1. Please give the information requested in the boxes below.
2. Enter your name in the space provided to the right, fold over and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either ignore illegible script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
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Thornton

Dylan Henry

[illegible]

- i) B. RFID ✓ (3)
- ii) A. Application X
- iii) B. 1518 bytes ✓ (3)
- iv) A. No, the network is not having required usable hosts. ✓ (3)
- v) A. True ✓ (3)
- vii) ~~A. True~~ B. False ✓ (2)
- viii) B. False ✓ (2)
- ix) A. True ✓ (2)
- x) B. False ✓ (3)

Q1 - 22.

- The OSI or Open Systems Interconnection model is a conceptual model that describes how computer systems communicate with one another without specifying how the computers' internal components work with one another. The TCP or Internet Protocol suite is a set of communications protocols used in networks such as the Internet.

- OSI Model:

- Application - This is where the application access network.
- Presentation - Ensures proper data format and encryption.
- Session - Controls ports and sessions for keeping connection.
- Transport - Transmits data using transmission protocols.
- Network - Picks which physical path data will take.
- Data link - Defines the format of data on the network.
- Physical - Physically transmits raw bit-stream.

- TCP/IP Model

- Application - Allows access to network resources.
- Transport - To provide reliable message and error message ^{delivery} ↓
- Network - To move packets from source to destination
- Network interface - Transmits data to devices on the same network.

- The main differences between the OSI and TCP/IP model include: OSI has 7 layers, and TCP/IP has 4. OSI follows a vertical approach and TCP/IP follows a horizontal one. OSI uses a 5 byte header whereas TCP/IP uses a 20 byte header.

Q2 total - 16.

Three

- IP stands for internet Protocol and is a set of rules which dictates how data is sent over the internet. ✓ ①
- The Network layer ✓ ①
- The main difference is in size. IPv4 is 32-bit and IPv6 is 128-bit hexadecimal with a similar header. It was created to solve the problem with IPv4's limited size. ✓ ①
- Class A IP addresses cover networks 1.0.0.0 to 127.0.0.0. Class B IP addresses cover networks 128.0.0.0 to 191.255.0.0. Class C IP addresses cover networks 192.0.0.0 to 223.255.255.0. ✓ ①
- It's used to map multiple local ~~IPs~~ private IP before transferring information. ✓ ①
- MAC stands for media access control address and is used for identifying a network interface controller. ✓ ①
- 6 bytes ✓ ①
- Data-link layer
- There are static and dynamic MAC addresses. Depending on their type of MAC address, they will either be stored in the static address table or dynamic address table. ✓ ①

Q3 total - 9.

Four

A hardware firewall acts as a blocker for [✓]①
any potential threats. ~~that way~~ It sits directly [✓]①
behind the router. A software firewall is a
piece of software which controls ~~network~~ network
traffic and protects against malicious attacks. [✓]①

Q4 total = 3.

- i) ~~B. MAC Address~~ Authentication X.
- ii) D. MAC Address Filtering X.
- iii) C. SSH ✓ (2)
- iv) C. Nslookup ✓ (2)
- v) A. Lose the end to end connectivity between hosts

✓ (2)

QS - 6.