



Complete, fold and seal
(see note 2 below)

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Instructions to Candidates

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).
8. **Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.**

1	Student Number	188694
2	Title of Examination Paper	Networking and Cyber Security Essentials
3	Module Code	ACCA4024
4	Date and Time of Examination	16 May 2022 5 PM
5	Examination Venue	Coley Sir Gw Llanelli
6	Seat Number	
7	Number of Answer Books handed in	

[illegible]

Question
One

- 1) RFID - Used to contain key pieces of information. ✓ (3)
 - 2) C) transport ✗
 - 3) D) 2048 bytes ✗
 - 4) ~~B) 1024 bytes~~ B ✗
 - 5) A) True ✓ (3)
 - 6) B) False ✓ (2)
 - 7) B) False ✓ (3)
 - 8) A) True ✓ (2)
 - 9) B) False ✓ (3)
- Q1 - 16.

Question Two: Purpose of the OSI and TCP Networking models
The purpose ^{of the TCP} to show how data is transmitted through Networking, from Start to Finish. ✓ (1)

• OSI

Application - Human Computer interaction

Presentation - Displays data in a useable format

Session - Controls Ports and sessions

Transport - Transmits data via protocols (UDP and TCP)

Network - Responsible for which physical path the data takes.

Data Link - Responsible for transmission of data

Physical - Responsible for the transmission of raw bit

Stream data, through the transmission of a physical medium of the network.

(6)

• TCP/IP

Application - Allow for the interaction between a human and ^{device} ~~the~~ network.

Transport - Transmits data via protocols.

Internet - Responsible for the path of the data.

Network Interface - Display the route for the data from start to end, as well as physical path, and is also responsible for raw data.

- The difference between the two models is that TCP/IP, is a more refined version of OSI, and is the main reason why OSI isn't used anymore. However, a lot of OSI's concepts still apply to TCP, hence, why people still learn it.

Q2 total = 13.

Question three IP addresses are unique identifiers for a network device, ~~but~~ they can be changed so that they aren't unique. They are used to identify devices on a network by searching an IP on a network, a user can find which device it belongs to.

- Network is the OSI layer responsible for IP's
- **IPv4** - 32 bit. Stream - Small transmission.
- **IPv6** - 128 bit Stream - Allows for a larger transmission rate than IPv4, as it has a greater bit stream rate.

- **Class A** - Used for large networks, and in most cases are assigned by internet service providers.
- **Class B** - Used by medium, and large networks, and are mainly used for LAN's, Local Area Networks.

- **NAT**, or Network Address Translation is used to see how well the IP's will work with one another, in order to ensure a stable ^{data} transmission.
- **MAC** address is a physical unique address that is ~~set~~ unique to one device and one device only. Its purpose is to allow user to identify their device.

- 218 bytes - Mac address format 4A:1B:6C:9D: ✓
- Network - OSI layer for Mac address ✓
- Unicast Mac address - One to one across a network ✓ ①
~~Area~~ Multicast address - One to many or many to many

Q3 total = 9.

Question 4

Four • Hardware firewalls are ~~uses~~ physical objects used to prevent unauthorised access of data. Such as, ✓ ①

- Software firewalls are virtual pieces of code that are in authorised access. Such as, windows firewall which will scan for malicious threats on your device. VPN's, as they provide your machine with a Virtual Private Network, that allows you to hide your IP from attackers. ✓ ①

- Network ports on firewalls can be taken advantage of by cyber attackers, in order to gain unauthorised access to your hardware. ✓ ①
 For example:

Port 21: HTML - If this port is closed, then no internet access can be had on the device. So, this port needs to be open. ✓ ①

- However, there are other ports that do exist on devices that don't ever get used, but can be taken advantage of to gain unauthorised access. ✓
 Port 82, can be closed, without any foreseeable restrictions.

- **DMZ** - Demilitarized Zone's are areas in where a network has trouble accessing the internet, unless the device is connected to the LAN, via Ethernet / CAT 5. ✓ ①

- Useful intrusion detection systems are anti virus/malware programs. Which are used to scan websites for malicious software, and also scan your PC for malicious downloads, and then warn you about any ~~detected~~ detected. ✓ (1)

Q4 part A - 9.

- Modem - This device allows for internet access, and is a non-intelligent device. ✓ (1)
- Router - Switches network paths in order to allow data to flow easier, and is an intelligent device. ✓ (2)
- Switches - Switches are used in a network, in order to allow a device to communicate with the right network. Intelligent. ✓ (2)
- Hubs - This is a port system that connects all Ethernet networks together, in order to allow them to act as one, this is a non-intelligent device. ✓ (1)

Q4 part B - 7.

Question
Five

Q4 total - 16.

1. A X
2. B ✓ (2)
3. B X
4. C ✓ (2)
5. A ✓ (2)

Q5 - 6.