



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).
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	EA2113978
2	Title of Examination Paper	Networking & Cybersecurity Essentials
3	Module Code	ACCA4024
4	Date and Time of Examination	May 16 th 2022 2.31pm - 4.31pm
5	Examination Venue	
6	Seat Number	
7	Number of Answer Books handed in	

[illegible]

(Gweler yr ochr arall am y fersiwn Cymraeg)

Complete, fold and seal
(see note 2 below)

SURNAME: Matthews

FORENAME(S): Ethan Robert

Question 1

- 1) B - RFID ✓ (3)
- 2) C - TRANSPORT X.
- 3) D - 2048 X.
- 4) A - NO, the network is not having ^{Required Usable} ~~required~~ hosts ✓ (3)
- 5) A - True ✓ (3)
- 7) B - False ✓ (2)
- 8) B - False ✓ (3)
- 9) A - True ✓ (2)
- 10) A - True X.

Q1 - 16.

Question 2

Osi 7 Layer Model

Application Layer - This layer is the client-user layer which is what we are able to see on our phone/computer screens. ✓ ①

Session - This creates the session for when the webpage first loads to when it expires. ✓ ①

Presentation - This pieces together the pixels and text ready for the application layer. ✓ ①

Transport - This layer transports data from one point in a network. ✓ ①

Network - This is where the ^{Network} ~~Address~~ is used to help securely send ~~of~~ data. ✓ ①

Data link -

Physical - This layer handles and processes all the requests given by the user. ✓ ①

TCP/IP Model

Application - Combines all the first 5 OSI layers into one whole layer. ✓ ①

Transport - Is what's used to transport packets of data across a network. ✓ ①

Network - This is where protocols are applied to make it more secure and less vulnerable. ✓ ①

Physical - This combines the physical and data link layers from the OSI Model. ✓ ①

Differences

The most noticeable difference between them both are the layers and what they all do. Due to them having different layers, protocols on them are going to be different. For example on the networking layer the OSI only handles the IP protocol whereas TCP/IP consists of both the TCP and IP protocols on its networking layer. ✓ ①

Another difference would be is that the TCP/IP only has 4 layers compared to OSI which has 7. The TCP model was designed to combine layers to make the model more effective and quicker. ✓ ①

Q2 total = 13.

Question 3

- An IP address is a logical address meaning that it will constantly change and will not stay the same. Its purpose is to provide a secure identifier to help the connection onto the internet. ✓ ①

• The networking Layer.

- IPv4 was available in the early 90's and was only configured with a set amount of bits.
- IPv6, the latest version was created with the aim of improving the amount of bits available due to the rapid increase of the internet so more IP addresses were needed. ✓ ①

- Class A ranges from 0 - 126 and is XXX. ✓ ①

- Class B ranges from 127 - 191 and is xxx.xxx. ✓ ①

- Class C ranges from 192 - 223 and is xxx.xxx.xxx. ✓ ①

- The purpose of a mac Address is to identify a device on a network. This will not change as Mac Addresses are physical. ✓ ①

- The transport Layer. ✓ ①

- Static and Dynamic.

Q3 total - 7

Question 4

To prevent the college LAN and the WAN between the other colleges a user authentication system could be useful as this means that only users authenticated with the system in the first place would only be able to access the system. (1)

Another way of protecting the networks would be with the use of firewalls. Firewalls can be used on both hardware and software (1) to stop any unwanted and harmful viruses from getting where it shouldn't. Firewalls are useful to have even on network ports as they stop any intrusion and unwanted access from these that are trying to bypass it and get into the network. (1)

Having a so called "Demilitarized" Zone could be quite useful to have as it allows for nothing to be there to harm or "fire" back so this allows for everything to be seen coming in and out to see for yourself if there are any harmful viruses or anything trying to travel outside of the network. (1)

- Modem -
- Router - Assigns IP Addresses to devices on a network (1)
- Switch -
- Hub -

Q4 total = 6.

Question 5

- 1) C - IP Address X
- 2) B - Encryption ✓ (2)
- 3) C - SSH ✓ (2)
- 4) D - Netstat. ✓ (2)
- 5) A - Test end to end Connectivity ✓ (2)

Q5 - 8.