



L-Università
ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

**SECONDARY EDUCATION APPLIED CERTIFICATE LEVEL
2023 SUPPLEMENTARY SESSION**

SUBJECT: **Information Technology**
PAPER NUMBER: Synoptic – Unit 2
DATE: 1st November 2023
TIME: 5:30 p.m. to 7:35 p.m.

**THIS PAPER SHOULD BE RETURNED TO THE INVIGILATOR
AFTER THE EXAMINATION.**

For examiners' use only:

Question	1	2	3	4	5	6	Total
Score							
Maximum	6	8	8	8	8	12	50

Answer **ALL** questions in the space provided. You may answer either in English or in Maltese.

Scenario

- 'Food Inc' is a chain of supermarkets.
- The supermarkets are located in Marsaxlokk, Qrendi and Sliema.
- These three supermarkets are connected to the same network to ensure that customers are charged the same prices.

Question 1

K-1 (6 marks)

a. Define the term network.

_____ (2)

b. Outline **TWO** advantages and **TWO** disadvantages of networks.

Advantage 1: _____ (0.5)

Advantage 2: _____ (0.5)

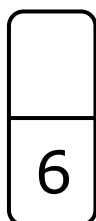
Disadvantage 1: _____ (0.5)

Disadvantage 2: _____ (0.5)

c. Although different network architectures are available, the management of 'Food Inc' implemented a client-server architecture in their supermarkets.

Differentiate between client-server and peer-to-peer network architectures with respect to security.

_____ (2)



Question 2

K-3 (8 marks)

CAT6 twisted pair cable was the most used data transmission medium in setting up the 'Food Inc' supermarkets network.

a. Match the following CAT6 pinouts to the correct standard by drawing a line between them.

CAT6 pinouts	Standards
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> 1. White Orange 5. White Blue 2. Orange 6. Green 3. White Green 7. White Brown 4. Blue 8. Brown </div>	T568A
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> 1. White Green 5. White Blue 2. Green 6. Orange 3. White Orange 7. White Brown 4. Blue 8. Brown </div>	T568B

(2)

b. Apart from the twisted pair cable, other data transmission media were considered.

Categorise the data transmission media given in the table below as wired or wireless.

optical fibre cable	infrared	microwave frequency	coaxial cable
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Wired	Wireless

(2)

This question continues on next page.

c. Choose any **TWO** of the data transmission media categorised in Question 2b and outline **ONE** limitation for each.

Data transmission media 1: _____

Limitation for data transmission media 1: _____

 _____ (2)

Data transmission media 2: _____

Limitation for data transmission media 2: _____

 _____ (2)

8

Question 3

K-5 (8 marks)

'Food Inc' considered multiple networking protocols before implementing their networked system.

a. Identify whether each of the following protocols is secure or not, by writing it down underneath the correct heading.

HTTPS	POP3	FTP	SFTP
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Secure	Not Secure (Insecure)

(2)

b. Outline the use of the following **TWO** networking protocols.

Use of POP3: _____
 _____ (1)

Use of SFTP: _____
 _____ (1)

c. DHCP is used by all 'Food Inc' supermarkets.

Describe the use and **TWO** benefits of DHCP.

Use: _____

_____ (2)

Benefit 1: _____

_____ (1)

Benefit 2: _____

_____ (1)

8

Question 4

K-7 (8 marks)

The employees of 'Food Inc' supermarkets are assigned different file and folder sharing permissions.

a. List **TWO** types of file sharing permissions and **TWO** types of folder sharing permissions. All **FOUR** permissions should be different.

File sharing permission 1: _____ (0.5)

File sharing permission 2: _____ (0.5)

Folder sharing permission 1: _____ (0.5)

Folder sharing permission 2: _____ (0.5)

This question continues on next page.

b. Outline **ONE** file and **ONE** folder sharing permission from those you listed in Question 4a.

File sharing permission: _____

Outline of file sharing permission: _____

_____ (1)

Folder sharing permission: _____

Outline of folder sharing permission: _____

_____ (1)

c. Describe **ONE** situation where the file and folder sharing permissions outlined in Question 4b might be used by 'Food Inc' supermarkets.

Situation for file sharing permission: _____

_____ (2)

Situation for folder sharing permission: _____

_____ (2)

8

Question 5

K-8 (8 marks)

The management of 'Food Inc' are aware that networks should be protected from security threats.

a. List **FOUR** network security threats, apart from phishing.

Network security threat 1: _____ (0.5)

Network security threat 2: _____ (0.5)

Network security threat 3: _____ (0.5)

Network security threat 4: _____ (0.5)

b. State **TWO** protection measures which can be used for a networked device, apart from anti-malware and disk freezing.

Protection measure 1: _____ (1)

Protection measure 2: _____ (1)

c. Customers of 'Food Inc' can access a wireless network while shopping at the supermarket.

Outline **TWO** protection measures which might be used to protect wireless networks, apart from changing the access point's username and password.

Protection measure 1: _____

_____ (2)

Protection measure 2: _____

_____ (2)

8

Please turn the page.

Question 6

C-3 (12 marks)

- Some of the employees of the 'Food Inc' think that securing the network is a waste of money and time.
- However, most members of the management team do not agree with this idea.

a. State **FOUR** repercussions of having an unsecured network in the case of 'Food Inc'.

Repercussion 1: _____ (1)

Repercussion 2: _____ (1)

Repercussion 3: _____ (1)

Repercussion 4: _____ (1)

b. Explain each of the **FOUR** repercussions stated in Question 6a with respect to 'Food Inc'.

Explanation of repercussion 1: _____

_____ (1)

Explanation of repercussion 2: _____

_____ (1)

Explanation of repercussion 3: _____

_____ (1)

Explanation of repercussion 4: _____

_____ (1)

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- c. • The management of 'Food Inc' is determined to keep the network secure.
• In fact, they intend to change the access point's default username and password and install anti-malware software.

Justify the **TWO** protection measures which 'Food Inc' intends to implement. Make sure that a different reason is provided to justify each protection measure.

Justification of changing the access point's default username and password:

(2)

Justification of installing anti-malware software:

(2)

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