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MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

**SECONDARY EDUCATION APPLIED CERTIFICATE LEVEL
2022 SUPPLEMENTARY SESSION**

SUBJECT:	**Information Technology**
PAPER NUMBER:	Synoptic – Unit 2
DATE:	1st November 2022
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

- 'Sports Mania' is a clothing company specialising in sportswear.
- This company has shops in Valletta, St Julians and Mosta.
- All three shops will be connected together through a network.
- This allows salespersons to view the stock available in the other shops.

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. The management of 'Sports Mania' were told that a client-server network architecture will be used rather than a peer-to-peer architecture.

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

_____

_____

_____

_____

_____

_____ (2)

6

Question 2   **K-2 (8 marks)**

a. Name **TWO** different types of networks, apart from HAN (Home Area Network).

Network 1: _____ (1)

Network 2: _____ (1)

b. Outline each of the networks named in Question 2a with respect to their geographical area.

Outline of Network 1: _____

_____

_____ (1)

Outline of Network 2: _____

_____

_____ (1)

c. The 'Sports Mania' shop at Valletta will have a bus network topology, while the shops at St Julians and Mosta will use a ring topology.

Describe these **TWO** network topologies.

Description of bus topology: _____

_____

_____

_____

_____ (2)

Description of ring topology: _____

_____

_____

_____

_____ (2)

8

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Question 3 — K-5 (8 marks)

- Several networking protocols are being considered by the management of 'Sports Mania'.
- Some of these protocols are presented in the table below.

a. Identify whether each protocol is secure or not, by ticking ✓ the correct box.

Protocol	Secure	Not Secure
SFTP	☐	☐
HTTP	☐	☐
POP3	☐	☐
WPA2	☐	☐

(2)

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

Use of HTTP: _____

_____ (1)

Use of WPA2: _____

_____ (1)

c. All 'Sports Mania' shops make use of DHCP.

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

Use: _____

_____

_____

_____ (2)

Benefit 1: _____

_____

_____ (1)

Benefit 2: _____

_____

_____ (1)

8

Question 4   **K-6 (8 marks)**

- The salespersons working at St Julians heard the IT people using the terms 'IP address' and 'subnetting'.
- Since they are not very technological, they are curious to know more about these terms.

a. Define the term IP address.

_____

_____

_____ (2)

b. Differentiate between IPv4 and IPv6 addresses based on address size and address format.
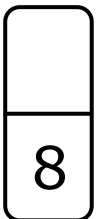
Differentiation with respect to address size:

_____

_____

_____ (1)

Differentiation with respect to address format:

_____

_____

_____ (1)

c. Describe **TWO** purposes of subnetting.

_____

_____

_____

_____

_____

_____

_____

_____

_____ (4)

8

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Question 5   **K-7 (8 marks)**

- At 'Sports Mania', all employees are assigned sharing permissions.
- Different file and folder sharing permissions are given based on the employees' role within the company.

a. List **ONE** type of file sharing permission and **ONE** different type of folder sharing permission.

File sharing permission: _____ (1)

Folder sharing permission: _____ (1)

b. Provide an outline for the file and folder sharing permissions listed in Question 5a.

Outline for file sharing permission: _____

_____

_____ (1)

Outline for folder sharing permission: _____

_____

_____ (1)

c. Describe **ONE** situation where each sharing permission listed in Question 5a might be used by the employees of 'Sports Mania'.

Situation for file sharing permission: _____

_____

_____

_____

_____ (2)

Situation for folder sharing permission: _____

_____

_____

_____

_____ (2)

8

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Question 6 **C-3 (12 marks)**

Despite being more costly than unsecured networks, the managers of all 'Sports Mania' shops agreed that all wired networks should be secured.

a. State **FOUR** repercussions of having an unsecured wired network with respect to 'Sports Mania'.

Repercussion 1: _____ (1)

Repercussion 2: _____ (1)

Repercussion 3: _____ (1)

Repercussion 4: _____ (1)

b. Explain each repercussion stated in Question 6a.

Explanation of repercussion 1: _____

_____

_____

_____ (1)

Explanation of repercussion 2: _____

_____

_____

_____ (1)

Explanation of repercussion 3: _____

_____

_____

_____ (1)

Explanation of repercussion 4: _____

_____

_____

_____ (1)

This question continues on next page.

c. • Access points will be installed in 'Sports Mania' shops to create a wireless network.
   • To make sure that the wireless network is secure, the access points default usernames and passwords will be changed, and their firmware will also be updated.

Justify these protection measures in terms of effectiveness and ease of installation/ configuration.

i. Changing the access point's default username and password

Justification in terms of effectiveness:

_____

_____

_____

_____ (1)

Justification in terms of ease of installation/configuration:

_____

_____

_____

_____ (1)

ii. Updating the access point's firmware

Justification in terms of effectiveness:

_____

_____

_____

_____ (1)

Justification in terms of ease of installation/configuration:

_____

_____

_____

_____ (1)

12