L-Università ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL
2025 MAIN SESSION**

SUBJECT:	**Information Technology**
PAPER NUMBER:	Controlled – Unit 3
DATE:	3rd April 2025
DURATION:	10:00 a.m. to 11:35 a.m.

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

Name of candidate _____

I.D. number _____

School _____

Class _____

Answer **ALL** questions in the space provided.

Scenario

- St Mary's College is a secondary school.
- Lately, the school's computer lab has been having a lot of network problems.
- The Head of school, Mr Tim, decided that it would be best to upgrade the computer lab's network.

Question 1   **K-1 (4 marks)**

a. Define the term 'network'.

_____

_____

_____

_____ (1)

b. State **TWO** purposes of a network, apart from sharing of data.

Purpose 1: _____

_____ (0.5)

Purpose 2: _____

_____ (0.5)

c. Outline **ONE** use of networks at schools and **ONE** use of networks at petrol stations.

Use of Networks at Schools: _____

_____

_____ (1)

Use of Networks at Petrol Stations: _____

_____

_____ (1)

Question 2   **K-2 (4 marks)**

a. Name **TWO** different types of networks, apart from LAN and CAN.

Network 1: _____ (0.5)

Network 2: _____ (0.5)

b. Outline LAN and CAN based on geographical area.

Outline of LAN (Local Area Network): _____

_____

_____ (0.5)

Outline of CAN (Campus Area Network): _____

_____

_____ (0.5)

c. Mr Tim needs to decide whether to implement a client-server or a peer-to-peer network architecture at the school's computer lab.

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

Differentiation with respect to Security: _____

_____

_____

_____

_____

_____ (1)

Differentiation with respect to Cost: _____

_____

_____

_____

_____

_____ (1)
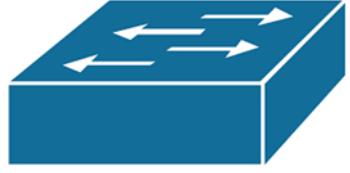
Please turn the page.

Question 3   **K-6 (4 marks)**

- Mr Tim, along with the school's IT technician, is designing the computer lab's network.
- The network will be able to connect both wired and wireless computer systems and devices.
- They are using CISCO symbols to draw the lab's network plan.

a. Identify each network device symbol shown in the table below.

Table 1: CISCO Devices Symbols

	Symbol	**Name**
Device 1		_____
Device 2		_____
Device 3		_____
Device 4		_____

(Source: https://vecta.io/)

(1)

b. State the use of the following network devices:

i. Access Point: _____

_____ (0.5)

ii. Router: _____

_____ (0.5)

c. Mr Tim is looking at a router, which specifications are listed in Table 2.

Table 2: Specifications for Router

Interface	3× 10/100Mbps LAN Ports 1× 10/100Mbps LAN/WAN Port 2× External SMA-F Antenna Interface
Antenna	2 detachable external 4G LTE antennas
Wireless Standards	IEEE 802.11b/g/n 2.4 GHz IEEE 802.11a/n/ac 5 GHz
Frequency Band	2.4 GHz and 5 GHz
External Power Supply	12V/1A

(Adapted from: https://www.tp-link.com)

Outline the following specifications for the router specified in Table 2.

i. Number of Ports: _____

_____

_____ (1)

ii. Power Source: _____

_____

_____ (1)

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

- Mr Tim emphasised that users should have different access rights depending on their role within the school.
- He asked the school technician to set different user accounts.

a. List **TWO** different local user accounts, apart from the 'standard' account.

Local User Account 1: _____ (0.5)

Local User Account 2: _____ (0.5)

This question continues on next page.

b. Describe the purpose of the **TWO** local user accounts you listed in Question 4 (a).

Purpose of Local User Account 1: _____

_____

_____

_____ (0.5)

Purpose of Local User Account 2: _____

_____

_____

_____ (0.5)

c. Outline **TWO** advantages and **TWO** disadvantages of online user accounts.

Advantage 1: _____

_____

_____ (0.5)

Advantage 2: _____

_____

_____ (0.5)

Disadvantage 1: _____

_____

_____ (0.5)

Disadvantage 2: _____

_____

_____ (0.5)

Question 5   **K-10 (4 marks)**

- Mr Tim is concerned about the computer lab's network security.
- The school technician will be taking all possible measures to ensure that both the wired and wireless network connections are protected from all sorts of network security threats.

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

Network Security Threat 1: _____ (0.25)

Network Security Threat 2: _____ (0.25)

Network Security Threat 3: _____ (0.25)

Network Security Threat 4: _____ (0.25)

b. State **FOUR** protection measures for a networked device, apart from firewall and sand boxing.

Protection Measure 1: _____

_____ (0.25)

Protection Measure 2: _____

_____ (0.25)

Protection Measure 3: _____

_____ (0.25)

Protection Measure 4: _____

_____ (0.25)

c. Outline **FOUR** protection measures for a wireless network, apart from WEP and MAC address filtering.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ (2)