



**L-Università  
ta' Malta**

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE  
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL  
2023 MAIN SESSION**

---

<b>SUBJECT:</b>	<b>Information Technology</b>
<b>PAPER NUMBER:</b>	Controlled – Unit 3
<b>DATE:</b>	18 <sup>th</sup> April 2023
<b>TIME:</b>	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**

- 'Travel Ease' is a hospitality business.
- It offers various services including lodging, food and transport.
- The owner of 'Travel Ease' will soon open a new boutique hotel in Sliema.
- He asked a network engineer to design the network for this new boutique hotel.

**Question 1**

**K-1 (4 marks)**

a) Define the term 'network'.

---

---

---

---

(1)

b) State **TWO** purposes of a network.

Purpose 1: \_\_\_\_\_  
\_\_\_\_\_ (0.5)

Purpose 2: \_\_\_\_\_  
\_\_\_\_\_ (0.5)

c) Outline **ONE** use of networks in hotels and **ONE** use of networks in aeroplanes.

---

---

---

---

---

---

---

---

---

---

(2)

**Question 2**

**K-2 (4 marks)**

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

Network 1: \_\_\_\_\_ (0.5)

Network 2: \_\_\_\_\_ (0.5)

b) Outline LAN and WAN based on geographical area.

Outline of LAN (Local Area Network): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ (0.5)

Outline of WAN (Wide Area Network): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ (0.5)

c) While discussing the network plan of the new boutique hotel with the director of 'Travel Ease', the network engineer mentioned the terms client-server and peer-to-peer network architectures. The director is not aware of the differences between these two architectures.

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

i. Differentiation with respect to Network Management: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ (1)

ii. Differentiation with respect to Security: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

***This question continues on next page.***

---



---



---

(1)





**Question 3**

**K-6 (4 marks)**

- The network engineer presented the network plan for the new boutique hotel.
- Different CISCO symbols were used to indicate the networking devices which will be used to build the hotel's network.

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

Table 1: CISCO Devices Symbols

	<b>Symbol</b>	<b>Name</b>
<b>Device 1</b>		_____
<b>Device 2</b>		_____
<b>Device 3</b>		_____
<b>Device 4</b>		_____

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

(1)

b) State the use of switch and repeater.

Switch: \_\_\_\_\_  
 \_\_\_\_\_ (0.5)

Repeater: \_\_\_\_\_  
 \_\_\_\_\_ (0.5)

c) Figure 1 displays some of the specifications of a Switch which will be used in the network setup of the new boutique hotel.

Total Non-Blocking Throughput	26 Gbps
Switching Capacity	52 Gbps
Forwarding Rate	38.69 Mpps
Max. Power Consumption	25W
Power Method	Universal AC Input: 100-240VAC, 50/60 Hz
Power Supply	AC/DC, Internal, 36W
Networking Interfaces	(24) 10/100/1000 Mbps Ethernet RJ45 Ports (2) 1 Gbps SFP Ports
Management Interface	Ethernet In-Band
Modes	SMB Layer 2 Gigabit Ethernet Switch
ESD/EMP Protection	Air: ± 16 kV, Contact: ± 12 kV
Operating Temperature	-5 to 40° C (23 to 104° F)
Operating Humidity	10 - 90% Noncondensing
Certifications	CE, FCC, IC

Figure 1: Specifications for Switch  
(Source: [https://dl.ubnt.com/ds/usw-24\\_ds.pdf](https://dl.ubnt.com/ds/usw-24_ds.pdf))

Outline the following specifications based on Figure 1.

i. Number of Ports: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ (1)

ii. Power Source: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ (1)

**Please turn the page.**

**Question 4**

**K-8 (4 marks)**

- The managers and employees of the new boutique hotel will have different access rights and sharing permissions.
- Hence, different local user accounts with different access rights will be created for each employee.

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

Local User Account 1: \_\_\_\_\_ (0.5)

Local User Account 2: \_\_\_\_\_ (0.5)

b) Describe the purpose of the **TWO** local user accounts 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.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

---

---

---

---

(2)

**Question 5**

**K-10 (4 marks)**

While discussing the network setup with the director of 'Travel Ease', the network engineer mentioned the importance of securing the network from possible network threats.

- a) List **FOUR** network security threats, apart from botnet.

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 sand boxing and backups.

Protection Measure 1: \_\_\_\_\_ (0.25)

Protection Measure 2: \_\_\_\_\_ (0.25)

Protection Measure 3: \_\_\_\_\_ (0.25)

Protection Measure 4: \_\_\_\_\_ (0.25)

***This question continues on next page.***

