



SUBJECT:	Information Technology
PAPER NUMBER:	I
DATE:	29 th May 2026
TIME:	9:00 a.m. to 12:05 p.m.

Directions to candidates

A total of **SIX** questions must be attempted; **THREE** from Section A and another **THREE** from Section B.

SECTION A: Information Systems

Answer the first question and any other TWO questions in this section.

Question A1

This question is compulsory. Answer all parts.

Following the reports of data loss and security breaches at InfoGuard Ltd., management has decided to review the company's security measures and disaster recovery procedures.

- Define negligence within the context of InfoGuard Ltd.'s Information Systems (IS) environment. (1)
- Discuss **THREE** possible effects of negligence within InfoGuard Ltd.'s IS environment. (3)
- Explain the potential impact **each** effect mentioned in part (b) may have on the organisation. (3)
- List **FOUR** main stages involved in the development of a disaster recovery plan. (2)
- Describe each stage mentioned in part (d). (4)
- Outline a security plan for InfoGuard Ltd., by describing **ONE** physical security measure and **ONE** software-related security measure. (2)
- Outline **TWO** criteria used to select a contingency plan. (2)
- Outline **THREE** main criteria that the management of InfoGuard Ltd. should use to select an appropriate contingency plan. (3)

(Total: 20 marks)

Please turn the page.

Answer TWO questions from Questions A2, A3 and A4.

Question A2

A computer system is made up of several hardware components that work together to process data and execute instructions.

- a) Outline the function of **FOUR** main input devices. (4)
- b) Describe the **FOUR** main hardware components of a computer system. (4)
- c) Using the components identified in part (b), draw a labelled simple Von Neumann architecture diagram. (4)
- d) Describe **FOUR** categories of computers. In the description, compare relative computational speed and relative data storage capacity. (4)
- e) Give typical applications of the main categories of computers mentioned in part (d). (4)

(Total: 20 marks)

Question A3

HealthSync Services Ltd. is a medium-sized healthcare services provider that uses ICT to manage patient records, appointment systems, and internal communication. The company has recently introduced new digital systems, and management has identified the need for ICT-related training for staff at different levels of the organization.

- a) Discuss the need for ICT-related training in modern organisations such as HealthSync Services Ltd. (2)
- b) Compare and contrast the training requirements of managerial staff and administrative staff at HealthSync Services Ltd. by giving **TWO** similarities and **TWO** differences. (4)
- c) Describe **THREE** ICT training requirements for technical staff at HealthSync Services Ltd. that differ from those of managerial and administrative staff. (3)
- d) Distinguish between unsupervised computer-based training and instructor-led training. (2)
- e) Give **ONE** example of unsupervised computer-based training and **ONE** example of instructor-led training that could be used by HealthSync Services Ltd. (2)
- f) Outline **FOUR** main components that should be included in a corporate ICT training strategy for HealthSync Services Ltd. (4)
- g) Outline **THREE** main reasons why HealthSync Services Ltd. requires a corporate ICT training strategy. (3)

(Total: 20 marks)

Question A4

DataCare Solutions Ltd. is a medium-sized organisation that relies on IS to collect, process, and analyse data in order to support daily operations and managerial decision-making.

- a) Define IS. (1)
- b) Outline the main function of IS within DataCare Solutions Ltd. (1)
- c) List **TWO** benefits of using IS for DataCare Solutions Ltd. (2)
- d) Describe **TWO** types of ISs commonly found in organisations particularly in DataCare Solutions Ltd. (2)
- e) Compare and contrast the **TWO** types of ISs identified in part (d) by giving **TWO** similarities and **TWO** differences. (4)

DataCare Solutions Ltd.'s IS requires both internal and external information to operate effectively.

- f) Differentiate between internal and external information. (2)
- g) Give **TWO** examples of internal information and **TWO** examples of external information which might be required by DataCare Solutions Ltd. (4)

Different ISs are required to support different management levels within DataCare Solutions Ltd. One such system is a tactical IS.

- h) Give **TWO** reasons why different management levels within DataCare Solutions Ltd. require different types of Information Systems. (2)
- i) Identify and describe **TWO** other types of Information Systems apart from tactical systems, used to support the remaining management levels at DataCare Solutions Ltd. (2)

(Total: 20 marks)

SECTION B: ICT in Organisations

Answer the first question and any other TWO questions in this section.

Question B1

This question is compulsory. Answer all parts.

MarketEdge, a small local company, plans to expand by selling products online and offering digital services. Before proceeding, the management wants to understand key e-commerce and e-business concepts and evaluate suitable models.

- a) Define e-commerce. (1)
- b) Identify **ONE** advantage and **ONE** disadvantage that MarketEdge might experience as a business when adopting e-commerce. (2)
- c) Identify **ONE** advantage and **ONE** disadvantage that MarketEdge's customers might experience when using its e-commerce services. (2)
- d) Define e-business. (1)

Question continues on the next page.

- e) Differentiate between e-commerce and e-business. (2)
- f) State **ONE** advantage and **ONE** disadvantage for MarketEdge if it adopts e-business services. (2)
- g) State **ONE** advantage and **ONE** disadvantage for MarketEdge's customers when interacting with the company through e-business services. (2)
- h) Describe **THREE** types of e-business models that MarketEdge could consider. (3)
- i) Give **ONE** example of **each** of the three e-business models described in part (h). (3)
- j) Compare any **TWO** of the models from part (h), giving **TWO** functional differences between them. (2)

(Total: 20 marks)

Answer any TWO questions from B2, B3 and B4.

Question B2

TechNova, a growing IT company, plans to reorganise its internal organisational structure as it expands.

- a) Define organisation. (1)
- b) Describe **TWO** ways in which TechNova can subdivide its organisation. (2)
- c) Based on the subdivisions identified in part (b), list **TWO** types of organisational charts which could be used to represent TechNova's structure. (1)
- d) Differentiate between the **TWO** types of organisational charts listed in part (c). (2)
- e) Choose **ONE** of the organisational charts mentioned in part (c) and provide a diagrammatic representation of it. (2)
- f) One of the top management roles within TechNova is that of the Chief Executive Officer (CEO). Describe the key responsibilities of this role. (2)

(Total: 10 marks)

Question B3

ByteWave Ltd. is reviewing the different written communication tools used within the company to ensure that the staff are communicating in an effective manner.

- a) Define written communication. (1)
- b) State **TWO** advantages and **TWO** disadvantages of written communication. (4)
- c) Describe **TWO** written communication methods that ByteWave Ltd. can use. (2)
- d) Mention **TWO** other communication mechanisms which can be used by ByteWave Ltd. apart from written communication. (1)
- e) Compare and contrast the **TWO** communication methods mentioned in part (d). (2)

(Total: 10 marks)

Question B4

GreenTransportation is a transport company that uses ICT systems to manage its operations. The company aims to adopt more sustainable practices and wants to understand how ICT can help reduce environmental impact and improve efficiency.

- a) Define ICT sustainability and relate it to the context of GreenTransportation. (2)
- b) Outline how the following ICT domains can contribute to sustainability at GreenTransportation:
- Storage techniques;
 - On-demand computing;
 - Data analytics;
 - Internet of Things (IoT). (4)
- c) Give **ONE** example of an ICT system or technology that GreenTransportation could use for each of the domains listed in part (b). (4)

(Total: 10 marks)



SUBJECT:	Information Technology
PAPER NUMBER:	II
DATE:	29 th May 2026
TIME:	4:00 p.m. to 7:05 p.m.

Directions to candidates

A total of **SIX** questions must be attempted; **THREE** from Section A and another **THREE** from Section B.

SECTION A: SOFTWARE

Answer the first question and any other TWO questions in this section.

Question A1

This is a compulsory question. Answer all parts.

The following is a basic homepage HTML structure for a small café, together with part of its external CSS file.

```

1.  <!DOCTYPE html>
2.  <html lang="en">
3.  <head>
4.      <meta charset="UTF-8">
5.      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6.      <title>Sunrise Café</title>
7.      <link rel="stylesheet" href="styles.css">
8.  </head>
9.  <body>
10.     <header>
11.         <h1>Sunrise Café</h1>
12.         <nav>
13.             <a href="index.html">Home</a>
14.             <a href="menu.html">Menu</a>
15.             <a href="contact.html">Contact Us</a>
16.         </nav>
17.     </header>
18.     <main>
19.         <section id="intro">
20.             <p>Welcome to Sunrise Café, your cosy spot for coffee.</p>
21.         </section>
22.     </main>
23.     <footer>
24.         <p>Open Monday to Saturday - Valletta - info@sunrisecafe.mt</p>
25.     </footer>
26. </body>
27. </html>

```

styles.css

```

1. body {
2.     font-family: Arial, sans-serif;
3.     margin: 0;
4.     background-color: white;
5. }
6.

```

Question continues on the next page.

```

7.  h1 {
8.      color: blue;
9.  }
10.
11.  p {
12.      color: black;
13.  }

```

- a) Explain **TWO** advantages of using semantic tags such as <main>, <header> and <footer> when designing web pages. (2)
- b) Modify the HTML in the <footer> so that the email address becomes a clickable email link that opens the user's default email client. (3)
- c) Identify the id attribute used in the HTML and state **ONE** reason why web developers use IDs in HTML. (2)
- d) Define the following HTML attributes as used in the code:
 - i. lang="en" (1)
 - ii. charset="UTF-8" (1)
 - iii. href="menu.html" (1)
- e) Write the correct HTML line to add an image of the cafe interior between line 19 and line 20. The image file is named *interior.jpg*, width must be 300px, and must include alternative text. (3)
- f) Write the CSS rule needed to change the background colour of the element with the id "intro" to yellow. (2)

(Total: 15 marks)

Answer any TWO questions from Questions A2, A3 and A4.

Question A2

TechCare Clinics is a healthcare organisation planning to update its patient management software. The IT manager must evaluate different software options by considering portability, compatibility, reliability, and several software evaluation criteria before making a final decision.

- a) Define software portability. (1)
- b) Outline **TWO** advantages why software portability is important for TechCare Clinics. (2)
- c) Explain why downward compatibility is important when upgrading systems in the clinic. (2)
- d) Give **ONE** example of downward compatibility in the context of TechCare Clinics' patient management software. (1)
- e) TechCare uses document templates that include charts and tables generated from spreadsheets. Explain Object Linking and Embedding (OLE) in the context of objects inside documents. (2)
- f) Describe each of the following reliability measures in direct relation to how they affect the clinics' operations:
 - i. MTTF; (1)
 - ii. MTBF. (1)
- g) List **THREE** software evaluation criteria that TechCare Clinics must evaluate when selecting new patient management software. (3)

- h) TechCare Clinics is evaluating two software options. One has a low initial purchase price but high yearly maintenance costs, while the second is more expensive to buy but cheaper to maintain over time. Identify **ONE** software evaluation criterion that applies to this situation, and explain what the clinic should take into consideration when making its decision. (2)
- (Total: 15 marks)**

Question A3

BrightLearn Academy is a private training centre that offers short IT courses. The centre stores information about its students and their course enrolments in a database. Part of the database is shown below.

Table 1: Students Table

StudentID	Name	Surname	AverageMark
S101	Maria	Cassar	78
S102	Daniel	Grech	45
S103	Elena	Dimech	88

Table 2: Courses Table

CourseCode	CourseName
IT101	Introduction to IT
DB201	Databases Fundamentals
WD150	Web Design Basics

Table 3: Enrolment Table

EnrolmentID	StudentID	CourseCode	Date
1	S101	IT101	2026-02-28
2	S102	IT101	2026-03-11
3	S103	DB201	2026-03-15
4	S102	WD150	2026-04-11
5	S101	WD150	2026-04-30

- a) Write an SQL statement to display the Name, Surname and AverageMark of all students whose AverageMark is greater than or equal to 70. (2)
- b) Write an SQL statement to display all fields from the ENROLMENT table for the course 'IT101', ordered by Date in ascending order. (3)
- c) Based on the above tables, what will be the output of the following SQL query? (1)

```
SELECT StudentID, CourseCode
FROM ENROLMENT
WHERE Date >= 2026-03-15
AND CourseCode = 'WD150';
```

- d) Interpret the outcome of the following DML statements based on the given tables:

- i. INSERT INTO STUDENT (StudentID, Name, Surname, AverageMark)
VALUES ('S104', 'Luca', 'Borg', 72); (1)

Question continues on the next page.

ii. UPDATE STUDENT
 SET AverageMark = 50
 WHERE StudentID = 'S102'; (1)

- e) With reference to the current table structure and sample data, evaluate whether the ENROLMENT table could use a composite primary key instead of EnrolmentID. If so, state which fields would form the composite key. (2)
- f) Write the ENROLMENT table using full relational notation. (2)
- g) Choose **ONE** attribute from each table (STUDENT, COURSE, ENROLMENT) and justify the most appropriate data type for **each**, based on the values stored. (3)

(Total: 15 marks)

Question A4

Mediwell Diagnostic Centre is a healthcare organisation that relies on various types of software to manage patient records, operate laboratory equipment, and support administrative work. The centre uses a custom patient management system, several utility applications for maintenance and security, and a mix of Windows PCs, Android tablets, and Linux-based lab machines. Staff also access a cloud-based Operating System (OS) interface for reporting and use general-purpose tools such as spreadsheets and document editors for daily tasks. Mediwell Diagnostic Centre is reviewing all software currently in use to ensure it is licensed correctly, efficient, secure, and suitable for its operational needs.

- a) Explain how software is used within Mediwell Diagnostic Centre's operations. (1)
- b) Mediwell Diagnostic Centre uses a mix of open-source, free, and proprietary software. Explain why the centre might choose each type and how licensing affects their use. (3)
- c) Mediwell Diagnostic Centre's custom patient management system is considered Intellectual Property. Explain why protecting this Intellectual Property is important for the centre. (1)
- d) For each of the following, explain how that type of system software supports Mediwell Diagnostic Centre's operations:
- i. OS; (1)
 - ii. antivirus utility; (1)
 - iii. file manager. (1)
- e) Mediwell Diagnostic Centre's IT team has identified several issues. Recommend the most suitable utility application for each:
- i. Patient record servers are running low on storage; (1)
 - ii. A Windows PC is slowing down due to file fragmentation; (1)
 - iii. Staff need to check CPU and memory usage during busy centre hours. (1)
- f) Mediwell Diagnostic Centre uses multiple devices to run its systems, including lab machines and administrative PCs. Explain why an OS is essential for these devices to function. (1)
- g) Mediwell Diagnostic Centre uses a combination of OS types. Explain each type listed below in relation to how Mediwell Diagnostic Centre might use it:
- i. Batch OS; (1)
 - ii. Real-time OS; (1)
 - iii. Mobile OS. (1)

(Total: 15 marks)

SECTION B: PROGRAMMING TECHNIQUES AND SYSTEM DEVELOPMENT

Answer the first question and any other TWO questions in this section.

Question B1

This is a compulsory question. Answer all parts.

a) The following are code snippets from the Python programming language.

A PE teacher has asked a student to write a program that records the number of steps taken over several days and then classifies their activity level. The program keeps a list of daily step counts, allows the user to add today's steps, calculates the average, and then decides how active the student is based on that average:

- Very active: 10 000 steps and above
- Active: 7 000–9 999
- Lightly active: 4 000–6 999
- Inactive: below 4 000

The program displays all the step counts, the rounded average, and the activity status. Study the following Python code and answer the questions that follow.

```

1.  def calculate_average(steps):
2.      total = 0
3.      for value in steps:
4.          total = total + value
5.      count = len(steps)
6.      average = total / count
7.      return average
8.
9.  def classify(avg):
10.     if avg >= 10000:
11.         return "Very active"
12.     elif avg >= 7000:
13.         return "Active"
14.     elif avg >= 4000:
15.         return "Lightly active"
16.     else:
17.         return "Inactive"
18.
19. week_steps = [6500, 8200, 12000, 3000, 9000]
20. today_str = input("Enter today's steps: ")
21. today = int(today_str)
22. week_steps.append(today)
23.
24. avg = calculate_average(week_steps)
25. rounded_avg = int(avg)
26. status = classify(avg)
27. goal_reached = avg >= 8000
28.
29. print("All steps:", week_steps)
30. print("Average steps:", rounded_avg)
31. print("Activity:", status)
32. print("Goal reached:", goal_reached)

```

Question continues on the next page.

- i. Between lines 1 and 7, the program calculates the average number of steps. Explain how this calculation works, referring to both the loop and final return value. (2)
 - ii. Identify **ONE** variable from the program that has local scope and **ONE** that has global scope. State the line numbers where they appear. (2)
 - iii. Explain why the type casting on line 21 is necessary for the program to function. (1)
 - iv. Give a Python statement that replaces the third value in `week_steps` with 11000. A list function must be used. Manually editing the list is not allowed. (2)
 - v. Modify the program so that if the average is above or equal to 2000 but below 4000, a message *"Warning: activity level too low!"* is printed. Specify both the line number where the new code should go and the exact code snippet. (2)
 - vi. Explain how the program ensures that today's step count is added to the rest of the week's step values. Refer to the relevant line numbers. (2)
 - vii. If the user enters "7800" as today's steps in the original program, what would be outputted on the screen. Show your working. (4)
- b) A webpage design for a travel blog is required. Below is the HTML and CSS used to style the page. Study the code and answer the questions that follow.

```

1. <!DOCTYPE html>
2. <html>
3. <head>
4.     <style>
5.         h2 {
6.             color: blue;
7.             text-align: left;
8.             font-size: 20px;
9.         }
10.        .highlight {
11.            background-color: yellow;
12.            font-weight: bold;
13.        }
14.    </style>
15.</head>
16.<body>
17.    <h2>Top Travel Destinations</h2>
18.    <p class="highlight">Explore the most beautiful locations!</p>
19.    <p>Click below to learn more about our featured destination.</p>
20.    Paris - The City of Lights
21.</body>
22.</html>

```

- i. The title `Top Travel Destinations` should appear centred. Which CSS property on lines 5–9 should be modified to achieve this? (1)
 - ii. Line 18 uses the class `highlight`. Describe the visual change applied by this class. (1)
 - iii. Rewrite line 20 so that `Paris - The City of Lights` becomes a clickable link pointing to: `https://visitparis.com`. (1)
 - iv. Rewrite the CSS rule in the `<style>` section for the `<p>` tag so that the text becomes blue, bold, and aligned to the left. (1)
 - v. List **ONE** advantage of placing the CSS rules inside a separate external stylesheet, rather than within the `<style>` element in the `<head>`. (1)
- c) A technology company is developing a Smart Home Monitoring System and needs a database to store information about homes, the devices installed in each home, and the activity logs generated by those devices. The system must store a list of homes, where each home has a unique identifier, an owner's name, and an address. Each home can have several smart devices installed, and every device must record its own unique device ID, the type of device (such as

thermostat, camera, or alarm), and its current status. Every device generates multiple log entries over time, and each log must include a unique log ID, the date and time of the event, and a message describing what happened. The database should therefore include three entities - Homes, Devices, and Logs - and must show that each home can have many devices, and each device can generate many logs. Using this description, draw the complete Entity-Relationship Diagram (ERD), clearly showing all entities, their attributes, primary keys, foreign keys, and the correct one-to-many relationships between them. (5)

(Total: 25 marks)

Answer any TWO questions from Questions B2, B3 and B4.

Question B2

SmartCity Malta is developing a new smart-transport system for a busy city. The project involves different teams using various programming languages and approaches. Some engineers write low-level code to control sensors, while others use high-level languages to implement features like payment processing and mobile notifications. The software team must choose appropriate translators, understand different paradigms, and model real-world processes using suitable programming styles. Management wants clear documentation explaining why different languages and paradigms are being used throughout the system.

- a) Explain how natural language is used in SmartCity Malta before programming begins. (1)
- b) Give **TWO** reasons why SmartCity Malta's developers cannot use natural language directly to program the system. (2)
- c) The embedded display units in bus stops must run extremely efficiently. Which language level is most appropriate and why? (2)
- d) List **ONE** advantage and **ONE** disadvantage of using high-level languages in the SmartCity Malta system. (2)
- e) Different SmartCity Malta modules use different translators. Match each module to the correct translator and justify your answer:
 - i. AI route-prediction module in Python; (2)
 - ii. Embedded sign controller written in assembly; (2)
 - iii. Web-based data viewer written in JavaScript. (2)
- f) Route selection is the process of choosing the best path for moving something from a start point to an end point. Explain how declarative programming could help in the "route selection" component of SmartCity Malta. (1)
- g) Give **ONE** reason SmartCity might use object-oriented programming to model buses and routes. (1)

(Total: 15 marks)

Question B3

SafeRide Transport Ltd operates a fleet of minibuses for airport transfers. Their current booking and vehicle-tracking system is ten years old and increasingly unreliable. Management has hired a systems analyst to help determine whether a new system is needed, what requirements it should meet, and whether development is feasible. The company wants an efficient, real-time system that handles bookings, assigns drivers, monitors vehicles, and generates reports. The analyst must follow all stages of system development, from defining the problem to deciding whether the new system is feasible and sustainable.

Question continues on the next page.

- a) Based on the scenario, identify **TWO** types of computer-based systems that SafeRide Transport Ltd requires and give **ONE** reason for **each** choice. (2)
- b) During early meetings, the systems analyst begins the problem definition stage. List **TWO** activities they must carry out at this stage, based on SafeRide Transport Ltd's situation. (2)
- c) Give **ONE** reason why SafeRide Transport Ltd may have decided to develop a new system. (2)
- d) The feasibility study must determine whether development is realistic. Match **each** situation below to its feasibility type:
 - i. The new system must integrate with GPS trackers already installed on vehicles; (1)
 - ii. Drivers must be willing to use a mobile app for their daily routes; (1)
 - iii. SafeRide Transport Ltd has enough budget to upgrade its central server. (1)
- e) List **FOUR** methods of how the systems analyst is able to gather data about SafeRide Transport Ltd's current system. (2)
- f) Describe **ONE** example of testing that must occur before SafeRide Transport Ltd's system becomes operational. (1)
- g) Give **TWO** reasons why maintenance is an important stage after the new system is implemented at SafeRide Transport Ltd. (2)
- h) The analyst has to consider whether to opt for off-the-shelf or bespoke development. Describe **ONE** reason why the analyst would choose a bespoke development for SafeRide Transport Ltd. (1)

(Total: 15 marks)

Question B4

A city is introducing an Urban Drone Delivery Coordination System that allows residents to use an online platform to request lightweight drone deliveries directly to their rooftop or balcony. Residents must authenticate before accessing the service, and once logged in, they can follow the progress of their delivery in real time. The system is required to assess environmental and airspace conditions before allowing any drone to depart. Drone Operators oversee the entire operation: they monitor and verify flight safety conditions and may intervene to adjust or override a drone's planned route whenever necessary.

- a) Using the scenario above, draw a Use Case Diagram (UCD) that identifies the key actors, use cases and the main interactions they have with the system. (6)
- b) Explain the hardware installation and configuration tasks that are needed during the implementation stage. (2)
- c) Explain why staff training is essential before the drone delivery system is fully implemented. (2)
- d) List **ONE** advantage and **ONE** disadvantage that a direct changeover has over a parallel changeover in the context of replacing a manual courier service with the new drone delivery system. (2)
- e) Explain why phased changeover might be suitable for rolling out the drone delivery system across different city districts. (1)
- f) Give **ONE** example of a user documentation item needed for Drone Operators and explain its importance. (1)
- g) Describe **ONE** benefit of producing high-quality technical documentation for the long-term maintenance of the drone delivery system. (1)

(Total: 15 marks)