



Province of the
EASTERN CAPE
EDUCATION

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Provinsie van die Oos Kaap: Departement van Onderwys
Porafensie Ya Kapa Botjhabela: Lefapha la Thuto

NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2025

COMPUTER APPLICATIONS TECHNOLOGY P2

MARKS: 150

TIME: 3 hours

This question paper consists of 17 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of:
SECTION A (25 marks)
SECTION B (75 marks)
SECTION C (50 marks)
2. Answer ALL the questions.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. Do NOT write in the right-hand margin of the ANSWER BOOK.
6. Leave a line after EACH sub-question.
7. Generally, one mark is allocated per fact; therefore, a 2-mark question would require TWO facts, etc.
8. Read the questions carefully. DO NOT give more than the question requires as this will NOT be marked.
9. All answers MUST be related to Computer Applications Technology.
10. Unless otherwise specified, answers such as 'cheaper', 'slower/faster', etc. will NOT be accepted.
11. Do NOT use brand names in your answers, unless specifically required.
12. Write neatly and legibly.

SECTION A**QUESTION 1: MULTIPLE-CHOICE QUESTIONS**

Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (1.1 to 1.10) in the ANSWER BOOK, for example 1.11 D.

- 1.1 Which ONE of the following would ensure a safe supply of electricity for computers during a power outage?
- A Power supply
 - B UPS
 - C Modem
 - D ROM
- (1)
- 1.2 Which ONE of the following refers to a protocol that provides a measure of protection to users of websites when online banking is done?
- A HTTPS
 - B FTP
 - C HTML
 - D HTTP
- (1)
- 1.3 The process of getting data from a CSV file into an application is called ...
- A exporting.
 - B compressing.
 - C copying.
 - D importing.
- (1)
- 1.4 Which ONE of the following stores the instructions for starting (booting) a computer?
- A RAM
 - B ROM
 - C SSD
 - D CPU
- (1)
- 1.5 ... is a standard, usually used when making a payment at a card machine, that allows devices to transfer data when they are in very close proximity.
- A Wi-Fi
 - B RFID
 - C NFC
 - D VPN
- (1)

- 1.6 Which ONE of the following statements about blockchain technology is FALSE?
- A Information recorded in a blockchain is not designed to be edited.
 - B Blockchain transactions rely on an external authority.
 - C Any kind of information can be stored in the blocks.
 - D Blockchain transactions are linked together and distributed among users. (1)
- 1.7 Which ONE of the following file types is most likely to include *geo-tagging* in its metadata?
- A .HTML
 - B .MP3
 - C .JPG
 - D .PDF (1)
- 1.8 In word processing, Harvard and APA are styles associated with the ...
- A bibliography.
 - B headings.
 - C captions.
 - D footnotes. (1)
- 1.9 ... is a wild card character that can be used in a spreadsheet function or in a database query.
- A \$
 - B #
 - C !
 - D * (1)
- 1.10 Which ONE of the following would result in the correct layout for the first row of the table below coded in HTML?
- | DSTV Shows | | |
|------------|---------------|--------------|
| Monday | 14:00 – 15:00 | CSI |
| Tuesday | 15:00 – 16:00 | Storage Wars |
| Wednesday | 17:00 – 18:00 | MasterChef |
- A <td rowspan = "3"> DSTV Shows </td>
 - B <tr colspan = "3"> DSTV Shows </tr>
 - C <th colspan = "3"> DSTV Shows </th>
 - D <th rowspan = "3"> DSTV Shows </th> (1)

[10]

QUESTION 2: MATCHING COLUMNS

Choose a term/concept from COLUMN B that matches the description in COLUMN A. Write only the letter (A–T) next to the question numbers (2.1 to 2.10) in the ANSWER BOOK, for example 2.11 U.

COLUMN A		COLUMN B
2.1	A destructive program disguised as a useful application	A NIC
		B RAM
2.2	The specification that refers to the number of colours that a pixel can represent	C CAPTCHA
		D Upgrading
2.3	A server that monitors and controls internet usage of devices connected in the network	E Resolution
		F GPS
2.4	An internal hardware component that allows a computer to connect to a network	G Template
		H Proxy
2.5	A security measure put into place to ensure a new user trying to register an account is in fact human	I Worm
		J Trojan
2.6	Software that enables a scanner to locate text in an image and then convert it to editable text	K Switch
		L TODAY
2.7	A term used to describe when a newer version of an application is bought and installed	M Lumen
		N OCR
2.8	A pre-designed document used as a starting point for the creation of new documents	O Updating
		P Virus
2.9	A unit used to describe the brightness of the image of a data projector	Q Colour depth
		R NOW
2.10	A spreadsheet function that returns both the date and time	S Theme
		T Response time

(10 x 1) [10]

QUESTION 3: TRUE/FALSE ITEMS

Indicate whether the following statements are TRUE or FALSE. Write 'true' or 'false' next to the question numbers (3.1 to 3.5) in the ANSWER BOOK. If the statement is true, write TRUE. If the statement is false, write FALSE and change the underlined word to make the statement TRUE. (Do not simply use the word NOT to change the statement.)

No mark will be awarded if FALSE is written without a correct answer.

EXAMPLES:

QUESTION	ANSWER
A <u>mouse</u> is an input device.	True
<u>Green computing</u> refers to old computing devices that people throw away and that end up in landfill sites.	False – E-waste

- 3.1 The EULA is a formal document that outlines the rules and guidelines for how employees may use the company's IT systems, networks, and digital resources. (1)
- 3.2 RSI is an injury that results from fast, repetitive work. (1)
- 3.3 The VGA port on a computer carries both audio and video signals. (1)
- 3.4 M-Learning is education using portable devices, via the internet. (1)
- 3.5 Companies often release shareware versions of their software for testing purposes before the software is released for sale. (1)

[5]**TOTAL SECTION A: 25**

SECTION B**QUESTION 4: SYSTEM TECHNOLOGIES**

- 4.1 Android is an example of open-source software (OSS).
- 4.1.1 Give ONE advantage and ONE disadvantage of OSS. (2)
 - 4.1.2 What type of software would Android be classified as? (1)
 - 4.1.3 Give TWO main functions of this software. (2)
 - 4.1.4 Name the type of device that Android would commonly be found on. (1)
- 4.2 Your parents bought a new multi-function printer for their home office and were prompted to install a driver.
- 4.2.1 Define the term *driver*. (2)
 - 4.2.2 Would the above printer be classified as a plug-and-play device? Motivate your answer by referring to the definition of plug-and-play. (3)
 - 4.2.3 Other than printing, give another function of a multi-function printer. (1)
 - 4.2.4 Explain why a multi-function printer is an example of convergence. (1)
- 4.3 As the hard drive becomes full it becomes slow and less responsive.
- Name a utility software, and explain how it can be used to:
- 4.3.1 Speed up the computer. (2)
 - 4.3.2 Free space on the hard drive. (2)
- 4.4 A good quality ergonomic keyboard and mouse would be of importance for a professional gamer.
- 4.4.1 Explain what is meant by the term *ergonomics*. (2)
 - 4.4.2 Give ONE feature of an ergonomically designed keyboard, other than being able to 'tilt'. (1)
 - 4.4.3 Give ONE advantage of using a wired keyboard and mouse. (1)
 - 4.4.4 Give TWO troubleshooting tips that you can try to get a non-responding wired keyboard to start working again. Assume the keyboard itself is clean and not damaged. (2)
 - 4.4.5 Name the type of user that a professional gamer would be classified as. (1)
- 4.5 Give ONE input device that is found in a laptop, but not in a typical desktop computer. (1)

[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

- 5.1 Explain the difference between a *router* and a *switch* in a network. (2)
- 5.2 Consider the advertisement for a fixed internet connection below and answer the questions that follow.



- 5.2.1 Give TWO advantages of using Fibre compared to ADSL, other than having a faster data transfer speed. (2)
- 5.2.2 Write down the missing unit in which the speed of the internet connection is measured in. (1)
- 5.2.3 Explain the term *unthrottled* with regards to this package. (2)
- 5.2.4 Give the general name for a company such as 'Axxess' and name one other service that they could provide, other than internet access. (2)
- 5.3 Give any TWO advantages of e-commerce from the seller's point of view. (2)
- 5.4 Give TWO security measures used by banks to protect their clients. (2)
- 5.5 Both grid computing and botnets connect many computers to perform tasks. Explain ONE key difference between how grid computing and botnets operate, focusing on the purpose and user control. (2)

[15]

QUESTION 6: INFORMATION MANAGEMENT

- 6.1 Questionnaires are commonly used in research projects.
- 6.1.1 Give ONE advantage and ONE disadvantage of using online questionnaires to collect data. (2)
- 6.1.2 Suggest TWO reasons why a researcher might choose to use a spreadsheet for data analysis. (2)
- 6.1.3 Explain why it is sometimes necessary to use a questionnaire to obtain information, when so much information already exists on the internet and can simply be downloaded (1)
- 6.1.4 The researcher has the option to shorten the URL before sending the link for the questionnaire.
- Give ONE benefit of choosing the option to shorten the URL. (1)
- 6.2 Give ONE example of information that is commonly included on the cover page of a report, besides the title of the report. (1)
- 6.3 Explain the purpose of a citation in a word processing document. (1)
- 6.4 The evaluation of a website accuracy used, by comparing the information to other sources, is essential in research.
- Discuss TWO other criteria used for evaluating websites. (2)
- [10]**

QUESTION 7: SOCIAL IMPLICATIONS

- 7.1 Your school's network has been infiltrated by a hacker. The hacker has installed malware that encrypted the data, and is now demanding to be paid via Bitcoin.
- 7.1.1 Give the name for the type of malware described above. (1)
- 7.1.2 Define the term *encryption* in the context above. (1)
- 7.1.3 Why do criminals prefer to be paid via Bitcoin? (1)
- 7.2 Discuss ONE example in your school where the use of computers could accomplish these goals:
- 7.2.1 Saving paper (1)
- 7.2.2 Saving time (1)
- 7.3 What is the purpose of a *firewall* in a computer system? (1)
- 7.4 Explain how spoofing can be used in a phishing email. (2)
- 7.5 Give TWO good practices to follow when using a computer to help ensure the physical health of the user. (2)
- [10]**

QUESTION 8: SOLUTION DEVELOPMENT

- 8.1 A user added an automatic table of contents to a document but found out that none of the headings were included in the table of contents.

Indicate what the user must do to include the headings in the table of contents. (1)

- 8.2 Where should one place text in a word-processing document so that it automatically appears on every page? (1)

- 8.3 For which category of disabled user is it important to use Word's Accessibility Checker? (1)

- 8.4 Study the screenshot of a database table in Design View below and answer the questions:

Field Name	Data Type	Description (Optional)
ID	AutoNumber	
Volunteer	Short Text	Name of volunteer
Gender	Short Text	
CellNo	Short Text	
Friday	Yes/No	
Saturday	Yes/No	
HoursPerDay	Short Text	The number of hours
Help	Short Text	Where volunteer is willing to assist
Donation	Currency	Amount donated

Field Properties	
General Lookup	
Field Size	255
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	>0 Or <=5
Validation Text	Only values between 1 and 5 may be entered
Required	Yes
Allow Zero Length	Yes
Indexed	Yes (No Duplicates)
Unicode Compression	No

A field name can be up to including spaces. Press F names

- 8.4.1 The validation rule for the HoursPerDay field is supposed to ensure that only values between 1 and 5 (both included) are accepted, but it is incorrect.

Correct the validation rule in the screenshot. (1)

- 8.4.2 Give TWO reasons, other than the incorrect validation rule, why the design of the HoursPerDay field may cause errors. (2)

- 8.4.3 The following criteria appears in the Donation field of a database query:

IS NULL

Explain the output of this query. (1)

8.5 Study the spreadsheet below and answer the questions that follow:

	A	B	C	D	E	F	G	H	I
1	Riverside Holiday Resort								
2									
3	Resident information			Room Rate per person per night			R950.00		
4									
5	Surname	Name	Initial	Room number	Date-in	Date-out	Total Days	Number of people	Total
6	Carrington	Lena	L	33	2025/04/13	2025/04/20	7	3	R19 950.00
7	Mendoza	Elias	E	8	2025/01/10	2025/01/14	4	2	R0.00
8	Nguyen	Talia	T	16	2025/02/25	2025/03/01	4	4	#VALUE!
9	Whitaker	Jordan	J	24	2025/04/02	2025/04/05	3	1	R21.00
10	Voss	Amira	A	11	2025/06/30	2025/07/05	1900/01/05	2	R40.00

8.5.1 Cell G10 does not have the same output as the previous cells.
Explain what needs to be done to rectify the situation. (1)

8.5.2 Explain in your own words what needs to be done to obtain the amount displayed in cell I6 in the Total column. (2)

8.5.3 Explain the most likely cause why the formulas in I6:I10 are not working correctly. (1)

8.5.4 Name the function that can be used to extract the initial from the Name. (1)

8.5.5 Write down the result of the following function: =LEN(A10) (1)

8.6 How does the function of a tag differ from that of an tag used in the code for a web page? (2)
[15]

TOTAL SECTION B: 75

SECTION C**QUESTION 9: INTEGRATED SCENARIO**

A local school has decided to build a new Robotics and Gaming Centre. The centre will be equipped with laptops, tablets, data projectors, 3D printers and robotic equipment. The school wishes to educate learners on building and coding their own drones and they also want to enter into online gaming tournaments.

- 9.1 Study the advertisement of the following gaming computer and answer the questions that follow.

Windows 11 Corsair Gaming PC for R41 999.00

Intel Core i7-12700 12-Core 2.7GHz

32GB DDR4 3600MHz

MSI GeForce RTX 3070 8GB Graphics Card

500 GB SSD + 2 TB HDD

1600 Watt PSU

Samsung 27" Odyssey FHD (1920 x 1080) 180Hz Gaming Monitor



- 9.1.1 Name the manufacturer of the processor. (1)
- 9.1.2 Discuss TWO advantages of using a SSD, other than faster data transfer. (2)
- 9.1.3 How much memory does this computer have? Explain the impact of having more memory on a computer. (2)
- 9.1.4 What is the purpose of cache memory in a computer system? (1)
- 9.1.5 Which component would generally have cache memory? (1)
- 9.1.6 Explain the difference between the size and the resolution of a monitor by also writing down the specification of each from the advertisement above. (4)
- 9.2 A 3D printer will print out plastic pieces needed to build a small robot.
- 9.2.1 Explain how a 3D printer works. (2)
- 9.2.2 Give TWO limitations of using this type of printer, besides answers relating to cost. (2)

- 9.3 A web-based application will be used to teach learners how to code a small robot.
- 9.3.1 Explain what a *web-based* application is. (2)
- 9.3.2 Give TWO advantages of using a web-based application. (2)
- 9.4 Some games will be using Virtual Reality (VR) and Augmented Reality (AR).
- 9.4.1 Explain the key difference between *VR* and *AR*. (2)
- 9.4.2 Discuss ONE limitation of virtual reality, other than the need for specialised equipment. (1)
- 9.5 As there will be a lot of expensive equipment in the centre, including laptops and tablets, there is a concern about security.
- Give TWO methods of securing the laptops and tablets against physical theft. (2)
- 9.6 A video to promote the new centre was being played in assembly. While the video was playing, the teacher had to press <Ctrl>+<Alt>+ to solve a problem.
- Name the utility software that can be opened using this shortcut. (1)

[25]

QUESTION 10: INTEGRATED SCENARIO

Read the extract below and answer the questions that follow.

Drones, body-worn cameras and other tech to help secure SA's borders

Guy Martin - 11th April 2025



Leon Schreiber and Michael Masiapato with a BMA drone.

Quadcopter unmanned aerial vehicles (UAVs), or drones, as well as body-worn cameras and other new technologies have been introduced by the Border Management Authority (BMA) to secure South Africa's borders and points of entry.

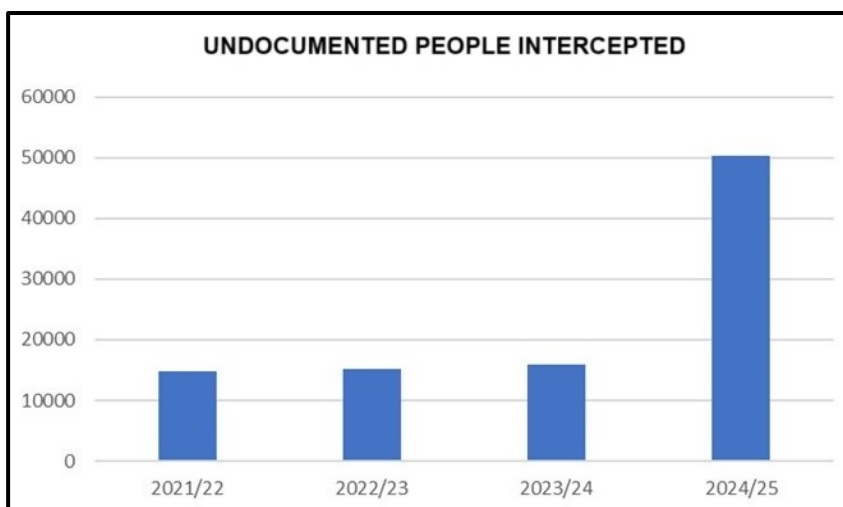
Speaking at a media briefing on Thursday, Home Affairs Minister Dr Leon Schreiber said the launch of the new technology marks a big step forward for enhancing border security and management.

Extract obtained from: <https://www.defencweb.co.za/featured/drones-body-worn-cameras-and-other-tech-to-help-secure-sas-borders/>

- 10.1 The drones will be powered by Artificial Intelligence (AI) so that they are able to recognise and lock onto heat sources, moving people or vehicles.
- 10.1.1 Briefly describe what a *drone* is. (2)
 - 10.1.2 Discuss TWO limitations of using drones in the scenario above. (2)
 - 10.1.3 Define the term *Artificial Intelligence*. (2)
 - 10.1.4 Give TWO advantages of using Artificial Intelligence. (2)
- 10.2 All the camera footage will be 'synced' to online/cloud storage.
- 10.2.1 Define the term *sync*. (2)
 - 10.2.2 Give TWO disadvantages of using online storage. (2)
 - 10.2.3 Give an example of an online storage platform that can be used. (1)

- 10.3 All the photos and videos will need to be backed up.
- 10.3.1 What storage medium would be best suited to back up all the data, besides online storage? (1)
 - 10.3.2 Give ONE reason why backups should be stored off-site. (1)
 - 10.3.3 Give TWO reasons as to why it is better to use a specialised backup application compared to the backup utility included in the operating system. (2)
- 10.4 The officials from the different borders around South Africa will be using video conferencing to have meetings.
- 10.4.1 Give TWO good practices to follow when making video calls. (2)
 - 10.4.2 Name the protocol used that enables users to transfer their voice over a network. (1)
- 10.5 The officials need to sign into the computers using their fingerprint.
- 10.5.1 Give the name for this type of input. (1)
 - 10.5.2 Explain why using a fingerprint compared to using a PIN code or a password is more secure. (2)
- 10.6 New appointment letters need to be drawn up for the employees that will be flying the drones.
- Which word processing feature is best suited to generate personalised appointment letters for multiple employees by automatically inserting individual details such as names and job titles into a standard template? (1)

- 10.7 The following is a chart on the statistics regarding undocumented people intercepted over the years.



What chart type would have been more suitable to represent this data?

(1)
[25]

TOTAL SECTION C: 50
GRAND TOTAL: 150



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GRADE 12

SEPTEMBER 2025

COMPUTER APPLICATIONS TECHNOLOGY P2 MARKING GUIDELINE

MARKS: 150

This marking guideline consists of 16 pages.

SUGGESTIONS AND RECOMMENDATIONS TO MARKERS

Revisit the questions and the marking guideline frequently during the marking session.

It is advisable to read the question frequently together with the candidate's response to check that it correlates, so that you are not misled by the candidate's statements/answers.

Be careful not to focus on keywords or general statements but rather read the entire answer. If in doubt, read the entire answer and then the question paper and the marking guidelines.

Ask yourself if the response could 'fit' into the marking guidelines before allocating the correct marks to the candidate.

Accept correct answers that are expressed differently, e.g. the marking guidelines states 'slow' and the candidate responds with 'not fast'.

Beware of overlapping answers to a specific question. In general, ONE mark is awarded per fact.

Do not choose answers on the candidate's behalf. Where a question requires a candidate to LIST or NAME: mark the first number of answers/facts required, e.g. the first TWO facts if the candidate presents a list of FIVE facts and only TWO facts were required, even if presented in paragraph format.

Questions requiring longer answers must be regarded as a single unit. Marks can be awarded if correct statements are found anywhere in the paragraph.

SECTION A**QUESTION 1: MULTIPLE-CHOICE**

1.1	B ✓	1
1.2	A ✓	1
1.3	D ✓	1
1.4	B ✓	1
1.5	C ✓	1
1.6	B ✓	1
1.7	C ✓	1
1.8	A ✓	1
1.9	D ✓	1
1.10	C ✓	1
TOTAL: [10]		

QUESTION 2: MATCHING ITEMS

2.1	J ✓ Trojan	1
2.2	Q ✓ Colour Depth	1
2.3	H ✓ Proxy	1
2.4	A ✓ NIC	1
2.5	C ✓ CAPTCHA	1
2.6	N ✓ OCR	1
2.7	D ✓ Upgrading	1
2.8	G ✓ Template	1
2.9	M ✓ Lumen	1
2.10	R ✓ NOW	1
TOTAL: [10]		

QUESTION 3: TRUE/FALSE ITEMS

(Note to marker:

- In Question 3.1, 3.3 and 3.5, candidates need to provide the correct term, e.g. Motherboard, in order to get the mark
- Award the mark if the correct answer is given without the word FALSE
- Do NOT award the mark if only the word FALSE is given without the correct answer)

3.1	False, AUP (Acceptable Use Policy) ✓	1
3.2	True ✓	1
3.3	False, HDMI ✓	1
3.4	True ✓	1
3.5	False, Beta ✓	1
TOTAL: [5]		

TOTAL SECTION A: 25

SECTION B

QUESTION 4: SYSTEM TECHNOLOGIES

4.1.1	ONE advantage: OSS is free to use. OSS can be modified. ✓ (Any one) ONE disadvantage: Limited support available. Many different versions of software available. You can never be sure of the quality, or that it will work properly. Open-source software can usually only be obtained from the internet. Open-source software is not widely used. It can be difficult to access documentation and supporting materials for it. ✓ (Any one)	2	6
4.1.2	Android type of software Operating system ✓	1	
4.1.3	TWO functions of operating system Manages hardware and software Provides a user interface Manages basic security ✓ ✓ (Any two)	2	
4.1.4	Android device Smartphone ✓	1	
4.2.1	Definition of Driver A driver is software ✓ (a program) that allows the operating system to communicate with hardware devices. ✓	2	7
4.2.2	Answer to plug-and-play device: No ✓ Reason: The user was asked to install a driver ✓, whereas plug-and-play refers to a device being configured automatically by the operating system when connected to the computer ✓, without the user having to install software.	3	
4.2.3	ONE function Scanning (Photo)copying Faxing Email ✓ (Any one)	1	
4.2.4	Multi-function printer example of convergence A multi-function printer combines multiple functions from different devices into one device. ✓	1	
4.3.1	Speed up the computer Utility: Disk Defragmenter ✓ Explanation: It reorganises data to improve access speed. ✓	2	

4.3.2	Free space on the hard drive Utility: Disk Cleanup ✓ Explanation: Removes temporary and unnecessary files to free up space ✓	2	4
4.4.1	Definition of Ergonomics Ergonomics is the study and design of equipment ✓ in the workplace in order to promote the safety and comfort of the user. ✓	2	7
4.4.2	ONE feature of ergonomic keyboard Wrist pad Split-key layout Curved layout Low-profile keys Thumbkeys ✓ (Any one)	1	
4.4.3	ONE advantage of wired keyboard Provides a more stable connection/no electrical interference. Will have constant power/does not require batteries. ✓ (Any one)	1	
4.4.4	TWO troubleshooting methods for wired keyboard not responding Check that cable is properly connected Try another USB port Check device manager for driver errors Update or reinstall keyboard drivers Restart the computer ✓✓ (Any two)	2	
4.4.5	Gamer type of user Power User ✓	1	
4.5	Input device on a laptop, not typical in desktop Touchpad/Trackpad Integrated/built in webcam Integrated/built-in microphone ✓ (Any one)	1	1
			[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1	Difference between router and switch in a network Router: A router connects different networks together, such as connecting a home network to the internet. ✓ Switch: A switch connects devices together within the same network via a cable ✓	2	2
5.2.1	TWO advantages of Fibre More reliable connection (less affected by electrical interference/EMI) Supports higher bandwidths for multiple users/devices. Can span longer distances from exchange without losing signal strength Immune to eavesdropping Less likely to degrade over time compared to copper lines. Less likely to be stolen due to no copper content ✓ ✓ (Any two)	2	7
5.2.2	Missing unit for speed Mbps (Megabits per second) ✓	1	
5.2.3	Definition of unthrottled Unthrottled means the internet speed is not intentionally slowed down ✓ by the service provider after a certain amount of data has been used/ when lines get busy ✓	2	
5.2.4	Name for Axxess company ISP ✓ (Internet Service Provider) ONE other service Email hosting Web hosting VoIP Cloud storage or backup services VPN Fax to email Spam filtering ✓ (Any one)	2	
5.3	TWO advantages of e-commerce for the seller Lower operational costs (no need for physical store). Wider customer reach (can sell nationally/internationally). Open 24/7 – can make sales any time. Easier to track customer behavior and trends Easier to update product information and promotions. Sellers can reach customers nationally or globally, not just in their local area. Inventory and sales can be tracked automatically using e-commerce platforms. (Any other valid advantage) ✓ ✓ (Any two)	2	2

5.4	TWO security measures used by banks PINs and passwords for logging in Two-factor authentication (2FA) One-time PINs (OTPs) Biometric verification (fingerprint or facial recognition) SMS/email alerts for transactions <i>(Any other valid advantage) ✓ ✓</i>	(Any two)	2	2
5.5	Grid computing and botnets Grid computing is legal and voluntary; users give permission to share their computing resources for legitimate purposes like scientific research. ✓ Botnets are often illegal and involve malware infecting computers without user knowledge or consent, used for malicious purposes like spamming or DDoS attacks. ✓		2	2
				[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1.1	ONE advantage Easy to distribute to a wide audience Saves time and cost Responses are automatically collected and stored digitally Not limited to a specific area – respondents can complete from anywhere in the world Contributes to green computing – saves paper <i>(Any other valid advantage) ✓</i> (Any one) ONE disadvantage Excludes people without internet access Responses may be dishonest or inaccurate Limited to users with basic digital skills Risk of low response rates as people can easily ignore link ✓ (Any one)	2	
6.1.2	TWO reasons for using a Spreadsheet Allows easy organization with sorting, and filtering of data Formulas and functions can be used for statistical analysis Supports data visualisation with graphs and charts Can handle large volumes of structured data Quick analysis such as conditional formatting ✓ ✓ (Any two)	2	
6.1.3	Need for questionnaire The information needed might be specific to a group of people or context Existing data may be outdated or irrelevant to the current research To gather opinions, attitudes, or preferences that are not published online ✓ (Any one)	1	
6.1.4	Benefit of shortening URL Easier to share or remember Looks cleaner and more professional Takes up less space in messages or posts May increase the likelihood of users clicking the link ✓ (Any one)	1	6
6.2	ONE example of information on cover page Author's name Date of submission Institution/school name Subject name Teacher's name Subtitle Abstract ✓ (Any one)	1	1
6.3	Purpose of a citation To give credit to the original source of information or ideas To avoid plagiarism To allow readers to locate the source for verification or further reading ✓ (Any one)	1	1

6.4	TWO other criteria other than accuracy Authority – Who is the author or publisher? Are they reputable? Currency – Is the information up to date? Objectivity – Is the content biased or neutral? Relevance/Coverage – Is the information appropriate for the research purpose? ✓ ✓ (Any two)	2	2
			[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1.1	Malware name Ransomware ✓	1	3
7.1.2	Define Encryption Encryption is when the data is locked or scrambled so that it can only be accessed with a decryption key/passcode/password ✓	1	
7.1.3	Bitcoin payment preference Bitcoin transactions are untraceable Bitcoin transactions do not form part of the normal banking system There is no central authority that enables the identity of the receiver to be known ✓ (Any one)	1	
7.2.1	Example of saving paper for the school Teachers can distribute digital notes, assignments, or tests instead of printing. Learners can submit assignments via email or LMS (e.g., Google Classroom/MS Teams). School can send out emails to parents instead of physical letters Application forms can be completed through an online form instead of printed manually (Any other valid answer, but must be about how computers can be used to save on paper.) ✓ (Any one)	1	2
7.2.2	Example of saving time Teachers can use marking software or auto-marked online quizzes. Timetables, announcements, and results can be shared instantly via school platforms. Students can research quickly using the internet instead of books. (Any other valid answer, but must be about how computers can be used to save on paper.) ✓ (Any one)	1	
7.3	Purpose of firewall The firewall acts as a barrier between the computer and the internet, preventing unauthorised access. ✓ OR A firewall is used to monitor and control incoming and outgoing network traffic based on security rules.	1	1
7.4	Spoofing used in phishing email Spoofing is when the sender's email address or display name looks like it is from a trusted source, such as a bank or school. ✓ This increases the chance that the victim will believe the email is legitimate and follow instructions, such as clicking on a malicious link or providing sensitive information. ✓	2	2

7.5	TWO good practices to ensure physical health Maintain good posture while sitting. Use a comfortable, adjustable chair Position the monitor at eye level. Take regular breaks to avoid eye strain and repetitive strain injuries Use ergonomic equipment (e.g., mouse, keyboard). Ensure adequate lighting to reduce glare on the screen. ✓ ✓ (Any two)	2	2
			[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1	No headings in table of contents The user must apply the built-in heading styles (e.g., Heading 1, Heading 2) to the headings in the document. ✓	1	1
8.2	Where in document will text appear on every page In the header or footer ✓ <i>(also accept Watermark)</i>	1	1
8.3	Accessibility checker: Category of disabled user Visually impaired / blind ✓	1	1
8.4.1	Validation rule >0 and ✓ <=5 <i>(Also accept between 1 and 5)</i>	1	4
8.4.2	TWO reasons for HoursPerDay causing errors HoursPerDay has been set as a primary key, which won't work as it is not a unique field to each record. ✓ HoursPerDay has been set as Short Text data type, which it should be set as a Number. ✓	2	
8.4.3	Output of Query IS NULL The query will display the volunteers where the Donation field is empty/ where no donation amount has been recorded. ✓	1	
8.5.1	Cell G10 The cell needs to be set to Number format ✓	1	6
8.5.2	I6: Total amount The total days needs to be multiplied by the number of people ✓ and then multiplied by the room rate ✓ <i>(Also accept when making reference to actual cell addresses in answer.)</i>	2	
8.5.3	I6:I10 Cell H3 has not been absolved ✓ <i>(Also accept if stated that cell H3 has not been given a name)</i>	1	
8.5.4	Extract initial LEFT function ✓	1	
8.5.5	Result of =LEN(A10) 4 ✓	1	
8.6	 differ from is used for normal bullets ✓ whereas is used for a numbered list. ✓	2	2
			[15]

TOTAL SECTION B: 75

SECTION C

QUESTION 9: INTEGRATED SCENARIO

9.1.1	Manufacturer for processor Intel ✓	1	
9.1.2	TWO advantages of SSD other than faster data transfer More durable as there are no moving parts, so less likely to be damaged Quieter operation as there is no spinning disk. More energy-efficient/uses less power than traditional hard drives. Data/Files on SSDs do not get fragmented like traditional hard drives Physically smaller in size, thus takes up less space inside the computer system ✓ ✓ (Any two)	2	
9.1.3	Amount of memory 32 GB ✓ Impact of more memory More memory allows the computer to run more programs at the same time and improves performance ✓	2	
9.1.4	Purpose of cache memory Cache memory stores frequently used data and instructions so the CPU can access them more quickly than from memory (RAM). ✓	1	
9.1.5	Component that come with cache memory CPU ✓	1	
9.1.6	Difference between size and resolution Size refers to the physical diagonal measurement of the screen. ✓ From the ad: 27" (inches) ✓ Resolution refers to the number of pixels displayed on the screen/the quality of the screen display. ✓ From the ad: 1920 x 1080 ✓	4	
			11

9.2.1	How a 3D printer works A 3D printer creates three-dimensional objects by adding material layer by layer ✓, following a digital model (CAD file) created on a computer. ✓	2	
9.2.2	TWO Limitations of using 3D printer Printing can be time-consuming, especially for complex designs. Not suitable for mass production. Limited material types – most use specific plastics. Requires technical skills to design or troubleshoot. Final products may lack strength or durability compared to manufactured parts. Model size is limited to the printer size ✓ ✓ (Any two)	2	4
9.3.1	Definition of web-based application A web-based application is software that runs from an internet server ✓ and accessed through a web browser ✓, without needing to be installed on a user's device.	2	
9.3.2	TWO advantages of web-based applications It can be accessed from any device with internet No need for installation / Saves on local storage space Software is always up to date Can run programs that require higher system requirements ✓ ✓ (Any two)	2	4
9.4.1	Difference between Virtual Reality and Augmented Reality Virtual Reality (VR) creates a complete digital environment that replaces the real world. ✓ Augmented Reality (AR) overlays digital elements (images, information) onto the real-world view, enhancing what the user sees. ✓	2	
9.4.2	ONE limitation of Virtual Reality It can cause motion sickness or eye strain for some users. May lead to isolation or disorientation with extended use. Limited physical space required to safely use VR without bumping into objects. Psychological, moral and ethical concerns, especially for children who may not be able to distinguish between what is real and virtual. ✓ (Any one)	1	3
9.5	TWO methods of securing laptops Use cable locks to physically attach devices to desks. Store devices in locked cabinets or rooms when not in use. Install motion sensors Install tracking software (e.g., Find My Device). Use surveillance cameras or alarms. ✓ ✓ (Any two)	2	2
9.6	Utility software Task manager ✓	1	1
			[25]

QUESTION 10

10.1.1	Explanation of a drone and how it works A drone is a remotely controlled or autonomous ✓ flying device ✓ equipped with sensors or cameras.	2	8
10.1.2	TWO limitations of drones Limited battery life – may require frequent charging or replacement. Weather dependent – performance may be affected by rain, wind, or fog. Signal interference or loss of connection can lead to crashes. Privacy and legal restrictions may limit flying areas. ✓ ✓ (Any two)	2	
10.1.3	Definition of Artificial Intelligence Artificial Intelligence (AI) is the simulation of human intelligence by machines ✓, allowing them to perform tasks such as learning, decision-making, and problem-solving. ✓	2	
10.1.4	TWO advantages of Artificial Intelligence Can process large amounts of data quickly and accurately. Reduces human error. Can work continuously without fatigue. Automates repetitive tasks, saving time and cost. ✓ ✓ (Any two)	2	
10.2.1	Definition of Sync Sync (short for synchronize) means automatically updating files between devices or between local storage and the cloud ✓ so that the latest version is available from any device. ✓	2	5
10.2.2	TWO disadvantages of online storage Requires an internet connection to access Not in control of backup or security Limited free space available – would need to pay for more storage space Data can accidentally be overwritten or deleted if shared with others If the company goes bankrupt, you could lose all your data You pay for the bandwidth used for uploading and downloading data. ✓ ✓ (Any two)	2	
10.2.3	Example of online storage platform Google Drive, Dropbox, OneDrive, iCloud, Mega, etc. ✓	1	
10.3.1	Storage medium for backing up videos and photos External hard drive ✓	1	4
10.3.2	Reason for backups stored off-site To protect data in case of theft, fire, or disaster. ✓	1	
10.3.3	TWO reasons for specialised backup software Backups can be scheduled Backups can be made of only new or changed data Backups can be encrypted Backups can be automatically compressed Backups can automatically be uploaded to online storage ✓ ✓ (Any two)	2	

10.4.1	TWO good practices for Video conferencing Ensure a stable internet connection. Test video and microphone before call Use a quiet, well-lit environment. Mute microphone when not speaking. Dress professionally and be on time. Position the camera at eye level. ✓ ✓ (Any two)	2	
10.4.2	Protocol VoIP (Voice over Internet Protocol) ✓	1	3
10.5.1	Type of input Biometric ✓	1	
10.5.2	Fingerprint more secure than password Biological features are unique to each individual ✓ and cannot be guessed or copied like a password. ✓	2	3
10.6	Word processing feature for letters Mail merge ✓	1	1
10.7	Suitable chart type Line Chart ✓	1	1
			[25]
TOTAL SECTION C:			50
GRAND TOTAL:			150