

Confidential



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

NOVEMBER 2024

MARKS: 150

TIME: 3 hours

This question paper consists of 17 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of:

SECTION A (25)
SECTION B (75)
SECTION C (50)
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 subquestion.
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 answers than the question requires as it 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, e.g. 1.11 D. ...

- 1.1 A pointing device that allows for gestures like pinch-to-zoom and two-finger scrolling:
- A Trackball
 - B Stylus
 - C Touchpad
 - D Mouse
- (1)
- 1.2 The digital divide can be reduced by ...
- A limiting the amount of information on the internet.
 - B using environmentally friendly computing devices.
 - C increasing access to ICT devices for all people.
 - D increasing the use of online and offline resources.
- (1)
- 1.3 A user who typically uses specialised software that requires high resolution graphics:
- A Home user
 - B SOHO user
 - C Mobile user
 - D Power user
- (1)
- 1.4 Which web browser feature is used for storing frequently visited websites?
- A Bookmarks
 - B Favourites
 - C Caching
 - D Add-on/Plug-in
- (1)
- 1.5 ... reduces the size of data files by encoding information more efficiently.
- A Decryption
 - B Compression
 - C Optimisation
 - D Extraction
- (1)

- 1.6 Citing of sources in academic work is used to ...
- A show the author's knowledge.
 - B identify the website address.
 - C acknowledge the original author.
 - D indicate new sources of information. (1)
- 1.7 Company X installed a network to specifically save costs. What will be their primary motivation for using the network?
- A To enable resource sharing
 - B To organise storage capacity
 - C To manage data security
 - D To simplify hardware setup (1)
- 1.8 Software used to view the results of HTML pages:
- A E-mail software
 - B Word processing
 - C Text file editor
 - D Web browser (1)
- 1.9 ... is a decorative letter that often takes up two or more lines of text, usually in a first paragraph or section of a document.
- A Font size
 - B WordArt
 - C Styles
 - D Drop Cap (1)
- 1.10 ... uses tiny droplets of ink onto paper to create images or text.
- A Laser printers
 - B 3D printers
 - C Braille printers
 - D Inkjet printers (1)

[10]

QUESTION 2: MATCHING ITEMS

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, e.g. 2.11 U.

COLUMN A		COLUMN B	
2.1	Integration of two or more technologies into a single device	A	#Value!
		B	utility
2.2	A feature that creates a transparent image or text in the background of a document	C	objectivity
		D	required field
2.3	A property in a database that automatically displays a value in a field when a new record is entered	E	watermark
		F	GHz
2.4	The ability to present information and ideas in an unbiased manner	G	location sharing
		H	digital footprint
2.5	The unit of measurement used for storage capacity	I	configuration
		J	multipurpose
2.6	Coordinates inserted based on the location of a device	K	GB
		L	#Name!
2.7	The setup of devices without the need for user intervention	M	WordArt
		N	plug-and-play
2.8	A trail of data that a user leaves behind while using the internet	O	drivers
		P	default value
2.9	Displays when a function refers to a cell with data that cannot be used in that function	Q	accuracy
		R	convergence
		S	history
2.10	Software that allows the operating system to communicate with hardware	T	geotagging

(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. Correct the statement if it is FALSE by changing the underlined word(s) to make the statement TRUE. (Do NOT simply use the word 'NOT' to change the statement.)

NO mark will be awarded if only FALSE is written.

EXAMPLES:

QUESTION	ANSWER
The initial start-up instructions are stored in the <u>ROM</u> .	True
An <u>NIC</u> has slots for hardware components, such as the CPU.	False, motherboard

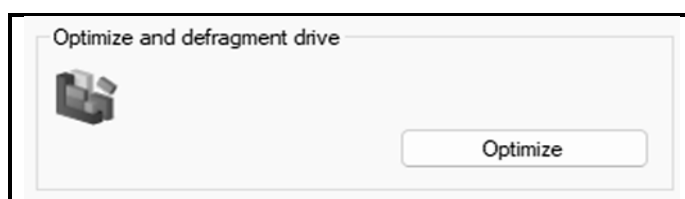
- 3.1 The CPU is responsible for processing instructions. (1)
- 3.2 The Large-key keyboard is a device that would help blind users to enter data. (1)
- 3.3 Primary memory is used for storing all programs and data permanently. (1)
- 3.4 Virtual reality (VR) refers to the technology where a person interacts with a simulation of a 3D environment in a seemingly real or physical way. (1)
- 3.5 The research question is a question that is brief and to the point to cover aspects of a broad research topic. (1)

[5]

TOTAL SECTION A: 25

SECTION B**QUESTION 4: SYSTEMS TECHNOLOGIES**

- 4.1 State TWO disadvantages of using a wireless mouse. (2)
- 4.2 Explain what *biometric security* is AND give ONE example of a biometric device. (2)
- 4.3 Describe the purpose of a UPS compared to a permanent power supply. (2)
- 4.4 Recommend THREE basic hardware components to consider when buying an end-user computer. (3)
- 4.5 A data projector has been set up and displays a 'No Signal' error.
Identify TWO possible reasons why this error occurs. (2)
- 4.6 Describe TWO accessibility features that a deaf person can use. (2)
- 4.7 One of the functions of an operating system is to manage programs and users.
- 4.7.1 Explain the difference between a *single-user system* and a *multi-user system*. (2)
- 4.7.2 Give ONE example of where a multi-user system can be used. (1)
- 4.8 Suggest TWO ways how a user can customise the graphical user interface (GUI) to suit their preferences. (2)
- 4.9 Users are often at risk of using flawed (faulty) software.
- 4.9.1 Recommend ONE way to fix a software bug. (1)
- 4.9.2 State TWO risks of using flawed software. (2)
- 4.10 Motivate why using the hidden attribute will be better for protecting the data in a file compared to the read-only attribute. (2)
- 4.11 The utility feature shown below is used on a computer hard drive.

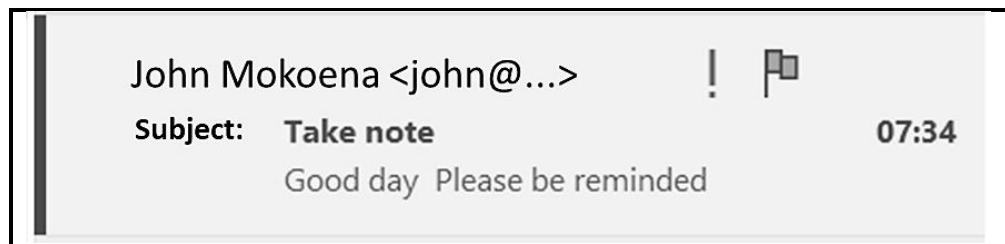


Explain why a user will use the feature above.

(2)
[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

- 5.1 Which communication medium is used for a high-speed internet connection? (1)
- 5.2 Explain what is meant by a *wireless access point*. (2)
- 5.3 A network can be used to provide better security.
Indicate ONE method that can be used to secure a network. (1)
- 5.4 Give TWO reasons why a company may choose NOT to use an intranet. (2)
- 5.5 Explain what the Fourth Industrial Revolution (4IR) is. (2)
- 5.6 State TWO advantages of using tabbed web browsing. (2)
- 5.7 Discuss TWO factors that may decrease upload and download speeds in an internet connection. (2)
- 5.8 John received an e-mail marked as high priority and decided to flag it.



- 5.8.1 Motivate why the 'Subject' line is inappropriate. (1)
- 5.8.2 Differentiate between *high priority* and *flagging*. (2)

[15]

QUESTION 6: INFORMATION MANAGEMENT

- 6.1 State TWO ways to present research information to a target audience. (2)
- 6.2 Give ONE reason why you would choose to use information from older sources. (1)
- 6.3 Give TWO guidelines to follow when setting questions for a questionnaire. (2)
- 6.4 Explain ONE reason why a database instead of a spreadsheet would be used to process data collected during research. (1)
- 6.5 You need to add an image to a document.
- 6.5.1 Name ONE word processing feature that may be used to acknowledge a source for an image, excluding citations. (1)
- 6.5.2 Give ONE example of the type of data you could add to acknowledge the source. (1)
- 6.6 Study the extract from the database report below.

Feedback			
Event	Participant name	Participant Code	Age
Bike	Agnus	Agnus320	34
	Clifford	Clifford135	25
	Grant	Grant140	31
	Hemlata	Hemlata434	30
	John	John435	39
	5	Average Age:	32
Run	Fatima	Fatima206	35
	Kabelo	Kabelo144	28
	Kholofelo	Kholofelo95	22
	Louis	Louis254	23
	Madeline	Madeline143	25
	Meschack	Meschack160	48
	Mohamed	Mohamed359	22

Give TWO findings of this report.

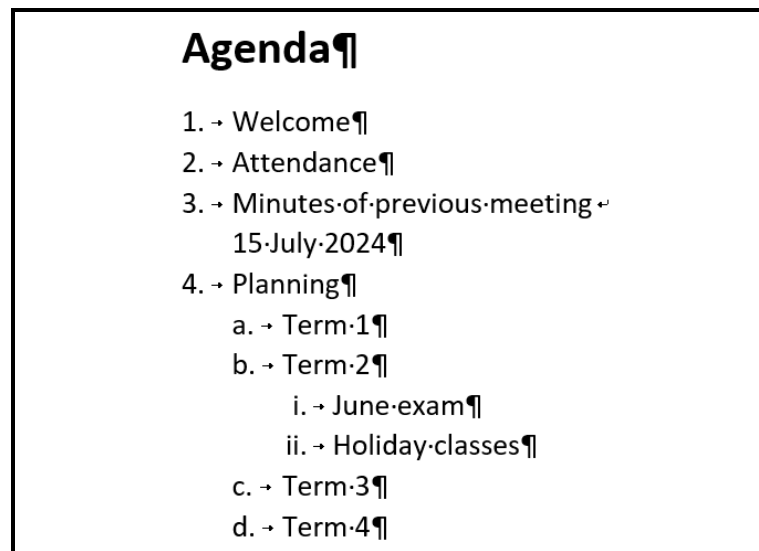
(2)
[10]

QUESTION 7: SOCIAL IMPLICATIONS

- 7.1 There are various types of viruses that affect a computer.
- 7.1.1 What is a *computer virus*? (2)
- 7.1.2 Explain TWO ways in which a virus can affect the performance of a computer. (2)
- 7.2 Which term describes all the ways in which confidential information is obtained by abusing the trusting nature of people? (1)
- 7.3 Green computing should be considered by all computer users.
- 7.3.1 Explain the term *green computing*. (1)
- 7.3.2 Name ONE energy-saving method that contributes to green computing. (1)
- 7.4 Your friend wanted to download a song from the internet and clicked the download button, but was redirected to a malicious page.
- 7.4.1 Give the term for the threat described above. (1)
- 7.4.2 Recommend TWO actions that your friend can take to prevent this from happening again. (2)
- [10]**

QUESTION 8: SOLUTION DEVELOPMENT

- 8.1 Give a word processing feature that will allow a user to format all the headings in a document at the same time. (1)
- 8.2 Tab stops can be used to align text neatly in columns.
- 8.2.1 Name TWO features that can be used to set tab stops in a word processing document. (2)
- 8.2.2 A leader line can be added with tab stops.
- Why would you add a leader line? (1)
- 8.3 Study the screenshot below.



- 8.3.1 Which word processing feature has been used to create the list? (1)
- 8.3.2 Explain why the date '15 July 2024' is not one of the list items AND how the date can be displayed as a list item. (2)
- 8.4 Explain the difference between the <th> and the <td> tags. (2)
- 8.5 Fields in a database table can consist of various data types.
- 8.5.1 Explain when an OLE object data type will be used. (1)
- 8.5.2 Name TWO data types that can be used for text in a database table. (2)

- 8.6 Which THREE functions were combined to extract the username from the e-mail address in the screenshot below?

E-mail address	Username
<u>cateducator@school.co.za</u>	cateducator
<u>maths1234@school.co.za</u>	maths1234
<u>engpoems@school.co.za</u>	engpoems
<u>lifechange@school.co.za</u>	lifechange

(3)
[15]

TOTAL SECTION B: 75

SECTION C**QUESTION 9: INTEGRATED SCENARIO**

Your school is celebrating its 50th birthday. A committee has been chosen to create and design an e-magazine as part of the celebration.

- 9.1 State TWO advantages for the committee to design an e-magazine instead of a hard-copy version. (2)
- 9.2 The committee needs to work on the same network system. The school has provided the committee with a wireless connection.
- 9.2.1 What network policy should the school and committee have in place? (1)
- 9.2.2 Explain what a *network adapter* is. (1)
- 9.2.3 Explain why the network might be slow while the committee is working on the e-magazine. (2)
- 9.3 The committee will conduct interviews with previous learners, teachers and staff for the e-magazine. The interviews will be conducted using video conferencing.
- 9.3.1 State TWO disadvantages of using video conferencing. (2)
- 9.3.2 Name ONE good practice the committee should consider when conducting the interviews online. (1)
- 9.3.3 Explain why interviews would be a better option to collect the information rather than using questionnaires. (2)
- 9.4 The committee will use a scanner to scan images and text for the e-magazine.
- 9.4.1 What does *MP* stand for in camera resolution? (1)
- 9.4.2 Why would the committee make use of OCR software? (1)
- 9.4.3 The school wants to scan photos of the opening day taken 50 years ago.
- Why would you not recommend scanning old photos? (1)
- 9.5 Photos that will be displayed in the e-magazine must be uploaded to cloud storage.
- State TWO advantages of storing photos on the cloud compared to local storage. (2)

- 9.6 The committee will be using various software applications to design and organise the e-magazine.
- 9.6.1 Name TWO types of application software the committee can use to design the e-magazine. (2)
- 9.6.2 Which word processing feature can be used to move an image next to a paragraph? (1)
- 9.6.3 An order form for the e-magazine is placed on the school's website.
Which HTML tag AND attribute will be used to create a link to the order form? (2)
- 9.7 The e-magazine will be sold to learners and parents.
- 9.7.1 Learners will use NFC payments to purchase the e-magazine.
Explain how NFC payments are made. (2)
- 9.7.2 Name TWO methods used to make online payments from home. (2)
- [25]**

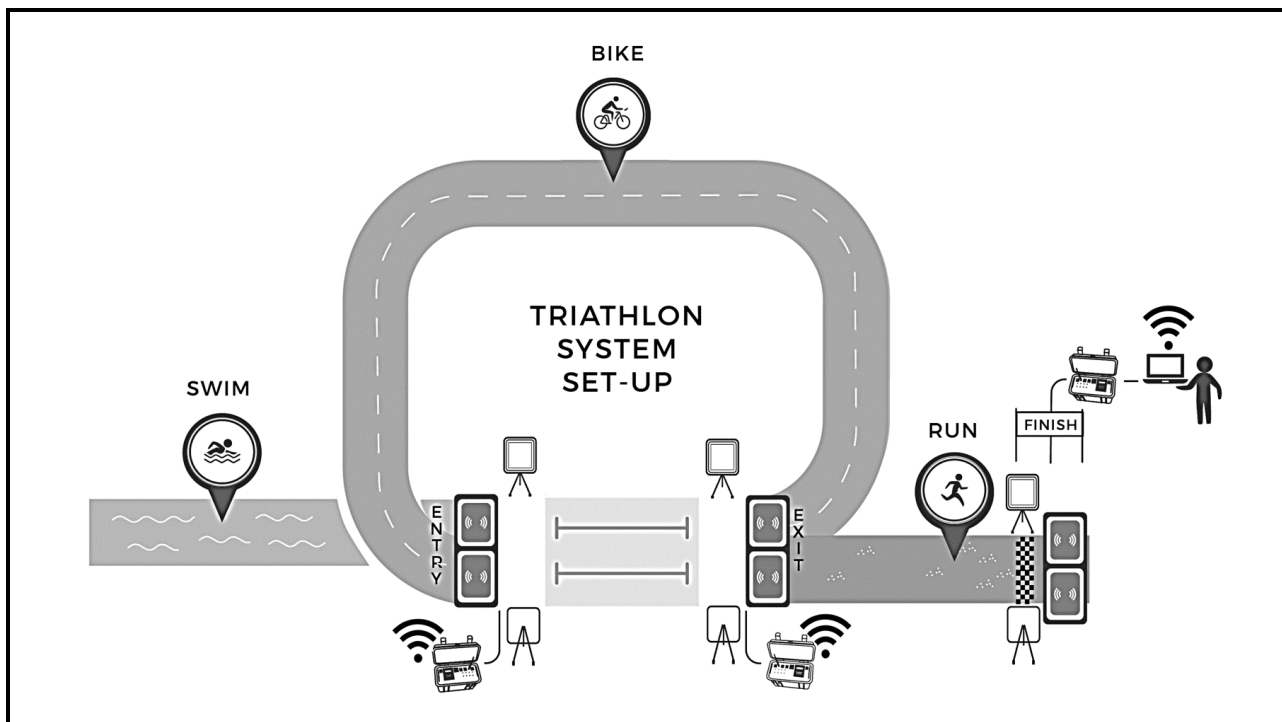
QUESTION 10: INTEGRATED SCENARIO

Your school will host a triathlon competition which includes swimming, running and bike riding.

Learners from the school will assist by creating posters, taking photos and also with the general administration of the competition.

- 10.1 The organisers from the school need to register participants.
- 10.1.1 Briefly explain what *information* is. (1)
- 10.1.2 Suggest TWO reasons why the organisers should use electronic forms to register participants. (2)
- 10.2 Posters about the event will be put up at various shopping centres to advertise the competition.
- 10.2.1 Name ONE other method of advertising this event. (1)
- 10.2.2 The posters contain a QR code.
What happens when the QR code is scanned? (1)
- 10.3 The competition will raise money for a local charity as part of the school's social responsibility.
- 10.3.1 Name an online method used to raise small amounts of money from a large number of people. (1)
- 10.3.2 Give ONE example of a popular online platform to raise money. (1)
- 10.4 Specialised cameras will be used to capture the competition.
- 10.4.1 Except for resolution, name TWO other camera specifications that impacts the quality of the images. (2)
- 10.4.2 Images will be transferred to a laptop via a card reader.
State TWO advantages of a card reader. (2)

10.5 The track layout below will be used for the competition. Participants will be issued with a device that is embedded with an RFID tag.



10.5.1 What type of network is displayed? (1)

10.5.2 Give TWO reasons why the school will be using RFID tags for the participants. (2)

10.5.3 What technology does RFID tags use to transmit data? (1)

10.6 An autonomous car will capture the leading participants' progress.

Define the concept *autonomous car*. (2)

10.7 The school organisers will be on duty for many hours during the competition. They will be tracking all aspects of the event at their computer stations.

10.7.1 Explain what *ergonomic design* is. (1)

10.7.2 Apart from ergonomically designed equipment, recommend TWO other ways for the organisers to prevent strain on their bodies. (2)

10.8 After the competition, data was captured in a spreadsheet.

Participant Code	Participant Name	Age	Event	Swim (Min)	Bike (Min)	Run (Min)	Total (Hrs)
Joseph441	Joseph	42	Swim	15	45	46	8.45
Mary445	Mary	55	Swim	26	53	45	8.20
Fatima316	Fatima	35	Bike	14	45	51	7.78
Pieter42	Pieter	21	Swim	11	57	51	1.98
Susan248	Susan	55	Run	21	58	56	7.82
Nthabiseng259	Nthabiseng	24	Bike	32	53	62	7.95

10.8.1 How can conditional formatting be used to analyse the data above? (2)

10.8.2 The organisers created a participant code as follows:

- The participant's name, followed by
- Random integer numbers

Which spreadsheet functions were used to generate the participant code? (2)

10.8.3 The organisers want to move the information from the spreadsheet to a database without opening the database.

Name the spreadsheet feature that can be used. (1)
[25]

TOTAL SECTION C: 50
GRAND TOTAL: 150



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

NOVEMBER 2024

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 21 pages.

SUGGESTIONS AND RECOMMENDATIONS TO MARKERS

- Revisit the questions and the marking guidelines frequently during the marking session.
- It is advisable to read (and re-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 or your senior marker 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 state '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	C	✓	1
1.2	C	✓	1
1.3	D	✓	1
1.4	A/B/C	✓	1
1.5	B	✓	1
1.6	C	✓	1
1.7	A/C	✓	1
1.8	D	✓	1
1.9	D	✓	1
1.10	D	✓	1
Total: [10]			

QUESTION 2: MATCHING ITEMS

2.1	R	✓	Convergence	1
2.2	E	✓	Watermark	1
2.3	P	✓	Default value	1
2.4	C	✓	Objectivity	1
2.5	K	✓	GB	1
2.6	T/G	✓	Geotagging/ Location sharing	1
2.7	N	✓	Plug-and-play	1
2.8	H	✓	Digital footprint	1
2.9	A	✓	#Value!	1
2.10	O	✓	Drivers	1
Total: [10]				

QUESTION 3: TRUE/FALSE ITEMS

(Note to marker:

- *In Question 3.2, 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	True ✓	1
3.2	False – Braille ✓	1
3.3	False - Secondary ✓	1
3.4	True ✓	1
3.5	False – Focus (question) ✓	1
		[5]

TOTAL SECTION A: 25

SECTION B**QUESTION 4: SYSTEMS TECHNOLOGIES**

4.1	<p>TWO disadvantages of using a wireless mouse</p> <p>(1) Can easily be lost/stolen (2) Batteries should be replaced often (3) Prone to signal interference/disturbance (4) Bluetooth receiver can be lost/damaged then mouse won't work/device out of range of receiver</p> <p style="text-align: right;">✓ ✓ (Any two)</p>		2
4.2	<p>Biometric security and ONE example of a biometric device</p> <p>Explanation: Biometric security is using unique biological features ✓ to access devices/systems</p> <p>ONE Example of a biometric device: (1) Fingerprint reader/scanner (2) Iris/Eye/Retinal scanner (3) Facial recognition camera (4) Voice recognition microphone</p> <p style="text-align: right;">✓ (Any one)</p>		2
4.3	<p>Purpose of a UPS compared to a permanent power supply</p> <p>Comparison: A power supply is designed to provide continuous power, ✓ while a UPS provides backup power during outages ✓</p> <p>OR</p> <p>Accept any two aspects for UPS: (1) A UPS has a battery backup system (2) A UPS provides backup power during outages (3) A UPS protects your device against power surges (4) A UPS allows user to save their work before switching off the device</p> <p style="text-align: right;">✓ ✓ (Any two)</p>		2

4.4	<p>THREE basic components of hardware</p> <p>(1) Processor (CPU) (2) Memory (RAM) (3) Storage (SSD/HDD) (4) Motherboard (5) Graphics card (GPU) (6) Network card (NIC) (7) Power supply</p> <p style="text-align: right;">✓✓✓ (Any three)</p>		3
4.5	<p>TWO reasons why projector shows 'No Signal'</p> <p>(1) Cable/signal (WiFi; Bluetooth, etc.) not connected properly (2) Faulty cable/port (3) Incorrect display settings (e.g., extended, duplicate, etc.) (4) Computer is off or on sleep mode (5) Faulty/outdated drivers (6) Correct source is not selected (PC/VGA/HDMI, etc.)</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
4.6	<p>Accessibility features a deaf person can use</p> <p>(1) Captions/subtitles for spoken dialog (2) Speech-to-text (3) Visual (flashing) notifications for sounds (4) Motion (vibration) notifications for sounds</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
4.7.1	<p>Difference between single-user and multi-user system</p> <p>A single-user system is limited to only one active user ✓/one user at a time</p> <p>Multi-user system allows more than one user at the same time ✓</p> <p><i>(Note to marker: Do not accept a repetition of the question)</i></p>	2	
4.7.2	<p>Example multi-user system</p> <p>(1) Online gaming (2) Online platforms (3) (Networked) companies/institutions (e.g., school, university, banks, SARS, etc.)</p> <p style="text-align: right;">✓ (Any one)</p> <p><i>(Note to marker: Accept any valid example)</i></p>	1	3

4.8	<p>TWO ways to customise GUI</p> <p>Display/Visual settings (1) Adjust screen resolution (2) Change background (3) Themes (4) Font size/colour (5) Brightness of screen</p> <p>Desktop layout/organisation (6) Add/remove shortcuts/icons (7) Format shortcuts/icons</p> <p>Input/device settings (8) Custom keyboard (9) Change cursor size/shape</p> <p>Sound settings (10) System sound (11) Notification sound</p> <p>Menu customisation (12) Quick access menus (13) Accessibility</p> <p>Windows behaviour (14) Multiple desktop</p> <p>System preference (15) Date/time format (16) Notification tray icons</p> <p style="text-align: right;">✓ ✓ (Any two)</p> <p><i>(Note to marker: Accept any relevant answers)</i></p>		2
4.9.1	<p>Fix software bugs in software</p> <p>(1) Install a patch (2) Install a service pack (3) Update software</p> <p style="text-align: right;">✓ (Any one)</p>	1	3

4.9.2	<p>TWO risks of flawed software</p> <p>(1) Security vulnerabilities: create security loopholes that attackers might use to gain unauthorised access (2) Data loss or corruption: data can be lost or corrupted (3) System crashing: the device can malfunction or crash, causing a disruption in normal operation (4) Compatibility issues: can cause compatibility problems with hardware and software</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	
4.10	<p>Hidden attribute vs read-only attribute</p> <p>Hidden: The user cannot see the file ✓ Read-only: The user can see the file, but cannot change the file ✓</p> <p>OR</p> <p>Hidden:</p> <p>(1) Hides the file from view and layout (2) Not visible to a user if show/hide is not enabled</p> <p>OR</p> <p>Read-only:</p> <p>(1) Prevents user from editing the file but can still be opened (2) Immediately visible to user (3) Can be viewed and copied, but not edited or deleted without changing the attribute</p> <p><i>(Note to marker: Accept any TWO answers)</i></p>	2	
4.11	<p>Explain disk optimisation</p> <p>To reorganising fragmented/scattered data on a computer's hard disk ✓ to improve performance and efficiency/fixing disk errors ✓</p>	2	
			[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1	<p>Communication medium for high-speed internet connection</p> <p>(1) Fibre optic cable (2) Copper Cable (Coaxial) (3) DSL (Digital Subscriber Line) (4) Ethernet (5) Radio waves 4G/5G/LTE Cellular Networks (6) Satellite</p> <p style="text-align: right;">✓ (Any one)</p>		1
5.2	<p>Explain a wireless access point</p> <p>A device ✓ that allows other wireless devices to connect to a wired/wireless network ✓</p>		2
5.3	<p>ONE method to secure network</p> <p>(1) Firewalls (2) VPN (3) Access controls/Authentication/Logins (Username and Password) (4) Antivirus or anti-malware security (5) Use security protocols for password encryption (6) Network data/files can be encrypted</p> <p style="text-align: right;">✓ (Any one)</p>		1
5.4	<p>TWO reasons NOT to use Intranet</p> <p>(1) Company too small to justify cost of Intranet/Often tied to licencing (Office etc.) (2) Staff can bring in unauthorised devices and infect the intranet with malware (3) Requires integration and maintenance (4) Often overly complex for employees/ Inaccessible/challenging to access for employees working from home/personal PCs or smartphones/Rarely equipped with offline functionality/Employees need to be trained</p> <p style="text-align: right;">✓ ✓ (Any two)</p>		2
5.5	<p>Explain 4IR</p> <p>Integration of technologies ✓ in the physical, digital, biological world ✓</p> <p><i>(Note to marker: Do not accept only examples without an explanation)</i></p>		2

5.6	<p>TWO advantages of tabbed browsing</p> <p>(1) Efficient use of screen space (2) Faster navigation/Saves time to access websites (3) Access to more than one website (4) Organise tabs in groups (5) Allows multiple home pages that all open simultaneously (6) Convenient for multitasking</p> <p style="text-align: right;">✓ ✓ (Any two)</p>		2
5.7	<p>TWO factors that may decrease upload and download speed</p> <p>(1) File size/Multiple files open (2) Bandwidth size (3) Background applications running (4) The type of internet connection (e.g., DSL, cable, fibre) (5) The quality/stability/reliability of the connection/network traffic/congestion (6) Distance from the service provider/router (7) Hardware capabilities (router, modem) (8) Shaping (9) Throttling (10) Capacity of the ISP's infrastructure (11) Efficiency of the user's devices</p> <p style="text-align: right;">✓ ✓ (Any two)</p>		2
5.8.1	<p>Subject line not appropriate</p> <p>The subject line does not indicate the topic of the e-mail ✓</p>	1	
5.8.2	<p>Difference between flagging and prioritise</p> <p>High priority: These emails are marked as important ✓ by the sender/should be addressed promptly</p> <p>Flagging: Flagging is a way for you to organise/categorise/prioritise/follow up or keep track of e-mails ✓</p>	2	3
			[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1	<p>TWO ways for presenting research information to target audience</p> <p>(1) Write a report (2) Create a presentation (3) Create a website (4) Podcast/Vodcast (5) Social media (6) Printed media</p> <p style="text-align: right;">✓ ✓ (Any two)</p> <p><i>(Note to marker: Accept any valid examples)</i></p>		2
6.2	<p>ONE reason for using older sources</p> <p>(1) Factual information that won't change (2) Established authority and credibility of the author (3) Historical information (4) The information is still relevant (5) Can be compared to newer sources</p> <p style="text-align: right;">✓ (Any one)</p>		1
6.3	<p>TWO guidelines for setting questions in a questionnaire</p> <p>(1) Use mostly closed questions (2) Keep questions short (3) Categorise/Group questions (4) Limit number of questions/Time to complete questionnaire (5) Use easily understandable language (6) Relevant questions/Target audience (7) Give options to choose from (8) Ask questions that will not guide people to specific answers/Unbiased</p> <p><i>(Note to marker: Accept any valid answers)</i></p> <p style="text-align: right;">✓ ✓ (Any two)</p>		2
6.4	<p>ONE reason to use database for data processing instead of spreadsheet</p> <p>(1) Perform (complex) queries (2) To create reports with grouping/calculations (3) Relate or link lots of data (4) Amount of data is too complex to work with/view in a spreadsheet</p> <p><i>(Note to marker: Accept any valid answer)</i></p> <p style="text-align: right;">✓ (Any one)</p>		1

6.5.1	<p>ONE referencing feature except citation</p> <p>(1) Bibliography (2) Endnote/Footnote (3) Caption</p> <p style="text-align: right;">✓ (Any one)</p>	1	
6.5.2	<p>Example of type of data</p> <p>(1) Include the image creator/author/photographer/artist name (2) Name of image (3) Website/Hyperlink (URL) to the original source (4) Date of creation, publisher</p> <p><i>(Note to marker: Accept any valid answer)</i></p> <p style="text-align: right;">✓ (Any one)</p>	1	2
6.6	<p>Indicate TWO findings of this report</p> <p>(1) The average age for participants of the bike race is 32 (2) The number of participants for the bike race is 5 (3) 3 of the participants for the bike race are older than 30 years/ 2 participants for the bike race are 30 years and younger (4) More participants in their 30's choose to bike (5) More runners than bikers</p> <p style="text-align: right;">✓ ✓ (Any two)</p> <p><i>(Note to marker: Do not allocate marks for layout explanations)</i></p>		2
			[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1.1	Definition of a computer virus Software/program/app ✓ that is designed for malicious intent/unwanted/unexpected ✓	2	
7.1.2	TWO ways a virus affects a computer Programs and files (1) File(s) become corrupt (2) Unknown program(s) or file(s)/folders suddenly appears (3) Additional programs start to run when the computer is started (4) Size of a file changes without explanation (5) Program(s) or file(s) are suddenly missing (6) Program/file changes without explanation/stop operating properly System (1) Settings of security software changed/switched off (2) Strange/unexpected message/pop ups/image/error messages displayed on the computer screen (3) Computer suddenly begins to start or run slowly (4) Unauthorised changes made to the registry (5) The available memory is less than it should be (6) System properties change (7) Free hard drive space suddenly gets reduced (8) Network performance is influenced (9) Computer no longer boots <i>(Note to marker: Accept any valid answers)</i>	✓ ✓ (Any two) 2	4
7.2	Term for all ways of misleading people into obtaining confidential information for fraud Social engineering ✓		1
7.3.1	Explain green computing Using computers in a way that is not harmful to the environment ✓	1	2

7.3.2	<p>ONE energy saving method</p> <p>(1) Switch off devices/unplug devices when not in use (2) Enable sleep/hibernate function if computer is not in use (3) Reduce screen brightness (4) Enable battery saving mode (5) Use energy saving devices e.g., LCD screen, SSD ✓ (Any one)</p>	1	
7.4.1	<p>Term for threat</p> <p>Click-jacking/Pharming ✓</p>	1	
7.4.2	<p>TWO recommendations to prevent the redirection to a malicious page</p> <p>(1) Download songs only from well-known websites (2) Verify that the website URL is correct and matches the official site (3) Use browser settings that require you to click to play multimedia content (4) Install pop-up blockers (5) Use browser extensions that provide additional security features (6) Keep your web browser up-to-date (7) Before clicking on a download link, hover over it to see the actual URL (8) Avoid clicking on any pop-ups, banners, or unexpected buttons that appear while you're trying to download (9) Keep your antivirus software updated and running (10) Check reviews and ratings of the download service or file before proceeding (11) Ensure the website uses HTTPS</p> <p><i>(Note to marker: Accept any valid answers)</i></p> <p>✓ ✓ (Any two)</p>	2	3
			[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1	Feature to change headings at the same time Styles ✓		1
8.2.1	Features to set tab stops Using the ruler ✓ Use tab settings ✓	2	3
8.2.2	ONE purpose of adding a leader line (1) To improve the readability/alignment of text in documents (2) Visually connect and guide the reader's eye across the space between tab stops (3) To add signature/date lines ✓ (Any one)	1	
8.3.1	Feature to create a list Multilevel list ✓	1	
8.3.2	Date is not part of the list item The date is still part of the same paragraph because a line break/soft enter/Shift+Enter was used ✓ A new number will only display for a new paragraph break/Enter ✓	2	3
8.4	Difference between <th> and <td> <th> Creates a header cell in a table/text that is bold and centred ✓ <td> Creates a cell to add data in a table ✓		2
8.5.1	Use of OLE object Used for linking/embedding/inserting images/files/videos as data ✓	1	3
8.5.2	Data types that can be used for text (1) Short text (2) Long text (3) Lookup ✓ ✓ (Any two)	2	

8.6	Functions combined to extract username from email address LEFT ✓ OR MID LEN ✓ FIND ✓		3
			[15]

TOTAL SECTION B: 75

SECTION C**QUESTION 9: INTEGRATED SCENARIO**

9.1	<p>TWO advantages for the committee for design of softcopy vs hardcopy</p> <p>(1) Interactive elements (2) Saving of printing cost (3) Easy to change/update (4) Reach larger audience/Easier to share (5) Saves the environment (6) Accessibility features</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
9.2.1	<p>Network policy for the school that must be in place</p> <p>AUP ✓</p>	1	
9.2.2	<p>Explain network adaptor</p> <p>A component in a computer that enables network connection ✓</p>	1	
9.2.3	<p>Network slow while working on the e-magazine</p> <p>(1) Not enough bandwidth/Network traffic/Congestion (2) Files being shared are too large (3) Weak signal (4) Faulty/Outdated hardware (5) DDoS attacks</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	4
9.3.1	<p>TWO disadvantages of using video conferencing</p> <p>(1) Requires a fast internet connection (2) Consumes a lot of data when using video/depletes CAP quickly (3) Lack of physical face to face contact/non-verbal cues</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	
9.3.2	<p>Good practice to consider when conducting online interview</p> <p>(1) Eliminate background noises (2) Equipment must be set up correctly (3) Make sure that the interview is recorded (4) Make sure there is good lighting (5) Speak clearly/Audible</p> <p><i>(Note to marker: Accept any valid answer)</i></p> <p style="text-align: right;">✓ (Any one)</p>	1	

9.3.3	<p>Interview is better than questionnaire</p> <p>(1) Deeper insight/clarification and follow up (2) Non-verbal cues (3) Response is immediate (4) Building relationships</p> <p><i>(Note to marker: Accept any valid answers)</i></p> <p style="text-align: right;">✓ ✓ (Any two)</p>	2	5
9.4.1	<p>Acronym meaning for MP</p> <p>Megapixel ✓</p>	1	3
9.4.2	<p>Use of OCR software</p> <p>To produce an editable soft copy ✓ from a scanned document</p>	1	
9.4.3	<p>Recommend why NOT to scan old photos</p> <p>(1) Poor quality scanned image (2) All imperfection (like tear and cracks) will also be included in the image (3) Time consuming process (4) Fragile photos might be damaged</p> <p style="text-align: right;">✓ (Any one)</p>	1	
9.5	<p>TWO advantages of storing photos in the cloud instead of on local storage</p> <p>(1) Convenient access from any device anywhere/anytime with internet connection (2) Serves as storage space to backup (3) Service provider may provide more security than local storage (4) Saves local storage space on local device (5) Synchronisation services between devices</p> <p style="text-align: right;">✓ ✓ (Any two)</p>		2
9.6.1	<p>TWO types of application software to design</p> <p>(1) Desktop publisher software (2) Designing software (3) Presentation software (4) Word processing software (5) Web design software</p> <p style="text-align: right;">✓ ✓ (Any two)</p>	2	5
9.6.2	<p>Word processing feature to move image next to paragraph</p> <p>Text wrapping ✓</p>	1	

9.6.3	Tag and attribute for a hyperlink <a> anchor tag ✓ href ✓	2	
9.7.1	NFC payment Payments are made by bringing POS and devices/bank card in close contact/tapping ✓ allowing them to transfer data wirelessly ✓	2	
9.7.2	TWO methods of payment made from home (1) Online banking/EFT (2) Electronic card payments (3) Money sending service (e.g., Cash send, eWallet) (4) Crypto currency (5) Payment gateways e.g. PayPal (through your banking app) ✓ ✓ (Any two)	2	4
			[25]

QUESTION 10: INTEGRATED SCENARIO

10.1.1	Explanation of information Information is processed data that has meaning ✓	1	
10.1.2	TWO reasons for using electronic forms (1) Accuracy (2) Participants can complete the form in a shorter time/More efficient to complete by participants (3) Less chance of processing errors (4) Perform data validation (5) Store/process/analyse information (6) Share with/Reach a larger audience (7) More environmentally friendly ✓ ✓ (Any two)	2	3
10.2.1	ONE other advertising method (1) Flyers/Stickers (2) Online platforms e.g., social media (3) Printed newspaper/magazines (4) Billboards (5) Radio/TV ✓ (Any one) (Note to marker: Accept any specific examples)	1	
10.2.2	Result of QR code scanned The QR code will provide a link to the website/document/ additional information ✓	1	2
10.3.1	Method to raise small amounts from large number of people Crowdfunding ✓	1	
10.3.2	Example of online platform to raise money (1) Kickstarter (2) Indiegogo (3) GoFundMe (4) seedInvest (5) Kiva (6) Patreon (7) CrowdQueb (8) Back a Buddy ✓ (Any one) (Note to marker: Accept any valid answer)	1	2

10.4.1	<p>TWO specifications that impact the quality of camera except resolution</p> <p>(1) Quality of the lens (2) Quality/size/type of sensor (3) Colour depth (4) Contrast ratio (5) On-board software/Software filters (6) ISO rating (7) Digital vs optical zoom (8) Image stabilisation (9) Image processor (10) Shutter speed (11) Flash</p> <p><i>(Note to marker: Accept any valid answers)</i></p> <p style="text-align: right;">✓ ✓ (Any two)</p>	2	
10.4.2	<p>TWO advantages of card reader</p> <p>(1) Faster transfer of images to a computer from a digital camera (2) Use less energy/power (3) Photos can be transferred to the laptop without the camera being present (4) Allows you to read from or write to many different cards</p> <p style="text-align: right;">✓ ✓ (Any two)</p>	2	4
10.5.1	<p>Type of network</p> <p>WLAN/LAN/WAN ✓</p>	1	
10.5.2	<p>TWO reasons for using RFID tags</p> <p>(1) Tracking the participants progress/safety during the race (2) Keep record of participant's time (3) Determining the position/rank of the participant</p> <p style="text-align: right;">✓ ✓ (Any two)</p>	2	
10.5.3	<p>Transmission of RFID technology</p> <p>Radio-frequency signals/radio waves ✓</p>	1	4
10.6	<p>Definition of autonomous car</p> <p>A self-driving ✓ car that can sense its environment and move safely with little or no human input ✓</p>		2
10.7.1	<p>Explain ergonomic design</p> <p>The design of furniture and other devices to make working more comfortable and safer ✓</p>	1	

10.7.2	Other ways to prevent strain on the body (1) Stand up and take regular breaks (2) Sit up straight/Back against the chair (3) Stretch back/shoulders/neck (4) Sit with both feet flat on the floor (5) Don't slouch/bend your neck/correct posture (6) Look away from the computer screen every 15 minutes ✓✓ (Any two)	2	3
10.8.1	Conditional formatting to analyse data (1) Highlight cell: ranking of participants according to events (2) Top or bottom rules: Identify the first or last position (3) Data bars: to indicate the data graphically (4) Colour scales: indicate the ranking in colours (5) Icon sets: indicate the ranking in icons ✓✓ (Any two)	2	5
10.8.2	Combination of spreadsheet functions CONCATENATE/& ✓ and RANDBETWEEN ✓	2	
10.8.3	Name spreadsheet feature Export ✓	1	
			[25]

TOTAL SECTION C: 50

GRAND TOTAL: 150