

## MARKING GUIDELINES

EXAMINATION	NATIONAL SENIOR CERTIFICATE
GRADE	12
DATE	NOVEMBER 2024
SUBJECT	COMPUTER APPLICATIONS TECHNOLOGY
PAPER	2
MARK TOTAL	150
DURATION (HOURS)	3
NUMBER OF PAGES	16



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## SUBJECT SPECIFIC MARKING GUIDELINE

- Revisit the questions and the marking guideline frequently during the marking session.
- It is advisable to read the question frequently (and re-read) together with the candidate's response to check that it correlates, so that you are not misled by the candidate's statements/answers.
- Do not 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 marking guidelines.
  - Ask yourself or the IM or CM if the response could 'fit' into the marking guidelines before allocating the correct marks to the candidates:
    - For example, the marking guidelines state 'cheap' and the learner responds with 'less expensive'; and 'delete' and the candidate responds with 'erase'/'wipe'/'remove' etc.
- Beware of overlapping answers to a specific question. In general, ONE mark is awarded per fact.
- All marking should be done in **red pen**. Internal moderation is done in **black pen**, moderation by SACAI is done in **green pen**, while Umalusi moderates in **purple pen**.
- Marks should be indicated with a tick "✓" directly above the relevant keyword. In the case of two marks per fact, two ticks "✓✓" should be indicated. Do NOT place the tick at the end of the line (sentence) or paragraph. Mark wrong answers with a cross (X) or underline wrong sentences.



## SECTION A

<b>QUESTION 1: MATCHING ITEMS</b>			
1.1	J	✓	(1)
1.2	O	✓	(1)
1.3	B	✓	(1)
1.4	I	✓	(1)
1.5	E	✓	(1)
1.6	G	✓	(1)
1.7	A	✓	(1)
1.8	D	✓	(1)
1.9	S	✓	(1)
1.10	Q	✓	(1)
			<b>[10]</b>

<b>QUESTION 2: MULTIPLE CHOICE</b>			
2.1	C	✓	(1)
2.2	C	✓	(1)
2.3	D	✓	(1)
2.4	C	✓	(1)
2.5	A	✓	(1)
			<b>[5]</b>

**QUESTION 3: TRUE OR FALSE**

Note to marker: Do not award a mark if the sentence is changed, only the underlined term may be changed if the candidate indicated that the statement is false.

3.1	False, backup	✓	(1)
3.2	False, ROM/CMOS/BIOS	✓	(1)
3.3	True	✓	(1)
3.4	False, RFID	✓	(1)
3.5	True	✓	(1)
3.6	True	✓	(1)
3.7	False, continuous	✓	(1)
3.8	False, cross-reference	✓	(1)
3.9	False, percentage	✓	(1)
3.10	True	✓	(1)
			<b>[10]</b>

**TOTAL SECTION A: [25]**



## SECTION B

### QUESTION 4: SYSTEM TECHNOLOGIES

4.1	<p><b>Data copied from RAM to storage</b> When the user gives an instruction/command to save the file/AutoSave (e.g., OneDrive, Google Drive) ✓</p>	(1)
4.2	<p><b>Advantage of biometric security</b></p> <ul style="list-style-type: none"> <li>• Accurate</li> <li>• Reduced fraud</li> <li>• Reliable</li> <li>• Convenient</li> <li>• Can be integrated into various devices</li> <li>• User recognition across different devices/systems</li> </ul> <p style="text-align: right;">Any one ✓</p>	(1)
4.3	<p><b>Email soft copy of essay</b> Take a photo of the essay ✓ using your (smart) phone ✓ and email it</p>	(2)
4.4	<p><b>Duty cycle of printer</b> The duty cycle of a printer refers to the <b>maximum number of pages it can handle in a month</b> ✓ without experiencing excessive wear and tear</p>	(1)
4.5	<p><b>Connect headphones using WiFi</b></p> <ul style="list-style-type: none"> <li>• Connect over longer distances/greater freedom of movement</li> <li>• Provides higher audio quality</li> <li>• Multi-device support – no need for repeated pairing</li> <li>• Wi-Fi is often used for multi-room audio systems</li> </ul> <p style="text-align: right;">Any one ✓</p>	(1)
4.6	<p><b>Lens aperture and focal length</b> Lens aperture: A larger (wider) aperture results in a brighter image (lets in more light). It is useful in low-light situations)/smaller aperture results in a darker image ✓ Resolution: It refers to the level of detail that a camera sensor can capture in an image/the higher the resolution the better the quality of the image ✓</p>	(2)
4.7.1	<p><b>Computer user – advertisement</b> Super user ✓</p> <p><b>Note:</b> Also accept examples: Graphic designers, video editors, 3D animators, gamers, data scientists, researchers, financial Analysts, data centres etc.</p>	(1)
4.7.2	<p><b>Amount of memory</b> 88 GB ✓ (64 on the motherboard + 24 on the graphics card)</p>	(1)



4.7.3	<p><b>Connection to monitor</b> DisplayPort ✓ <b>AND</b></p> <ul style="list-style-type: none"> <li>• Higher Bandwidth</li> <li>• Hot-Plugging Support</li> <li>• Longer Cable Lengths</li> <li>• Higher Audio Bitrates</li> </ul> <p style="text-align: right;">Any one ✓</p>	(2)
4.7.4	<p><b>Connection in picture</b> USB C ✓</p>	(1)
4.8.1	<p><b>Problems with incompatible software</b></p> <ul style="list-style-type: none"> <li>• Reduced functionality: features and functions in the software may not work correctly or as intended</li> <li>• Data loss/corruption</li> <li>• Integration problems with other software or the system</li> <li>• Lack of security updates</li> <li>• Applications can crash</li> </ul> <p style="text-align: right;">Any two ✓✓</p> <p>NOTE: Answer must relate to incompatibility</p>	(2)
4.8.2	<p><b>Cause of incompatibility</b></p> <ul style="list-style-type: none"> <li>• Incompatibility arises when different versions of the same software exist/are used</li> <li>• Operating System Compatibility: Software is developed to run on specific operating systems</li> </ul> <p style="text-align: right;">Any one ✓</p>	(1)
4.9	<p><b>Metadata of a file</b> Metadata provides details related to a file ✓</p> <p><b>AND an example:</b></p> <ul style="list-style-type: none"> <li>• File Name</li> <li>• File Size</li> <li>• File Type</li> <li>• Creation Date</li> <li>• Modification Date</li> <li>• Author</li> <li>• Title</li> <li>• Subject</li> </ul> <p style="text-align: right;">Any one ✓</p>	(2)



4.10	<p><b>G suite vs Desktop office suite</b></p> <p>Google G Suite allows:</p> <ul style="list-style-type: none"> <li>• Real-time/cloud-based collaboration</li> <li>• Multiple users can edit the same document simultaneously</li> <li>• Automatic updates</li> <li>• Easy access from anywhere</li> <li>• No installation needed/Does not take up space on local storage</li> </ul> <p style="text-align: right;">Any two ✓✓ (2)</p>	
4.11	<p><b>Document management software features</b></p> <ul style="list-style-type: none"> <li>• Access control/Username and password protection</li> <li>• Restricted access</li> <li>• Encryption</li> <li>• Audit trails</li> <li>• Backup and recovery</li> <li>• Secure file transfer</li> <li>• Document locking/documents are locked when a user is actively editing them</li> <li>• Time-based access</li> </ul> <p style="text-align: right;">Any two ✓✓ (2)</p>	
4.12	<p><b>Feature of open-source software makes customisation of software possible</b></p> <p>Access to source code ✓</p>	(1)
4.13	<p><b>Response time of a display device</b></p> <p>Yes, ✓ a faster response time results in smoother transitions between tasks and applications, reducing delays and interruptions ✓</p> <p><b>OR</b></p> <p><b>No, response time is only important when doing graphic intensive tasks e.g., playing games or video editing</b></p>	(2)
<b>[25]</b>		



## QUESTION 5: NETWORK AND INTERNET TECHNOLOGY

5.1.1	<b>Picture of connector</b> RJ45 ✓	(1)
5.1.2	<b>The cable using RJ45</b> UTP/Ethernet✓	(1)
5.1.3	<b>Devices connected with RJ45</b> Computer ✓ to switch/router ✓ <b>OR</b> Computer ✓ to computer/drukker✓ <b>OR</b> Skakelaar✓ to printer ✓  <b>NOTE:</b> Award only one mark for computer to server because a computer does not connect to a server directly.	(2)
5.2	<b>IoT in smart home</b> Various devices in a smart home can be controlled through a smartphone/smart device ✓ by using an internet connection ✓	(2)
5.3	<b>Social media bubble</b> Environment within social media platforms ✓ where users are exposed to information and perspectives that reinforce their existing beliefs ✓	(2)
5.4	<b>NFC in shopping mall</b> <ul style="list-style-type: none"> <li>• When making payments</li> <li>• Product information and interaction</li> <li>• Information kiosks: visitors can tap their smartphones to access maps, directories, promotions, or other relevant information</li> <li>• Smart posters: to access multimedia content, product details, or exclusive deals associated with the advertised items</li> <li>• Access control systems: access control at restricted areas</li> <li>• Parking lots: visitors can use their NFC-enabled devices or parking cards to access parking facilities, pay for parking fees, or validate their parking</li> </ul> <p style="text-align: right;">Any one ✓</p>	(1)
5.5	<b>Client-server network vs a peer-to-peer network</b> Peer to peer network✓ Since some games are installed on computer A and others on computer B, a peer-to-peer network allows for efficient sharing of resources between the two computers. ✓	(2)
5.6.1	<b>What is a protocol</b> Protocols are a set of rules ✓ for data transmission between devices/how data is transmitted and received in a computer network ✓	(2)
5.6.2	<b>e-Commerce protocol</b> https ✓	(1)



5.7	<b>System reliability in grid computing</b> When one computer fails, other computers in the grid take over the work, ensuring system reliability ✓	(1)
		[15]

### QUESTION 6: INFORMATION MANAGEMENT

6.1	<b>Information management</b> Process/analyse ✓	(1)
6.2	<b>Correlation trend</b> It describes how changes in one variable/pattern/relationship ✓ are associated with changes in another variable/between two or more variables ✓	(2)
6.3	<b>Questionnaires replace traditional research</b> When you want the opinion of a person ✓	(1)
6.4.1	<b>Obtain answers 1 to 5</b> Use a dropdown/combo box/option buttons ✓ to get the answer from the user	(1)
6.4.2	<b>Open-ended question from multiple-choice</b> By including an "other" option ✓ it will encourage respondents to provide additional information ✓	(2)
6.4.3	<b>Currency of information</b> Currency refers to how up to date the information is ✓	(1)
6.4.4	<b>Sponsor</b> The information might be biased/not objective ✓	(1)
6.5	<b>Chart type</b> Circle/pie chart ✓	(1)
		[10]



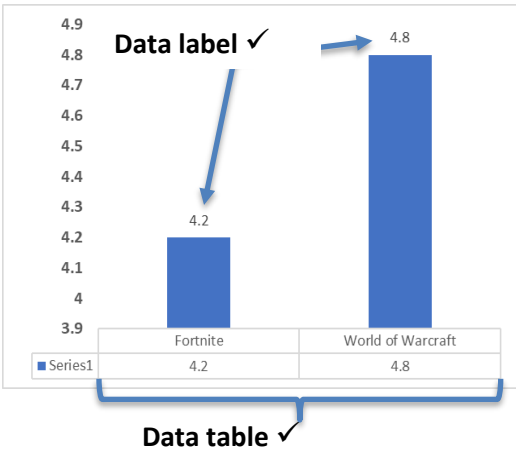
## QUESTION 7: SOCIAL IMPLICATIONS

7.1	<p><b>Type of keyboard</b> A blind/visually impaired person</p>	(1)
7.2	<p><b>Authentication method</b></p> <ul style="list-style-type: none"> <li>• Screen-lock patterns: Users draw a specific pattern (on the touchscreen) to unlock the device</li> <li>• PINs: They are numeric codes entered by the user</li> <li>• Password: A combination of characters, numbers and symbols</li> </ul> <p style="text-align: right;">Any one and description ✓✓</p> <p><b>NOTE:</b> One mark for naming and one mark for the description</p>	(2)
7.3	<p><b>Manual backups</b></p> <ul style="list-style-type: none"> <li>• Human error: Manual backups rely on users remembering to initiate the backup process</li> <li>• Incomplete backups: Users may forget to include certain files or folders in their manual backups</li> <li>• Time-consuming: Creating manual backups can be time-consuming, especially if users have a large amount of data to back up regularly</li> <li>• Risk of data loss between backups: Since manual backups are typically performed periodically, there is a risk of data loss between backup sessions</li> <li>• Recovery difficulty: In the event of data loss or system failure, manually restoring data from backups can be complex</li> <li>• Inconsistent backup schedules: The user must remember to make the manual backup</li> </ul> <p style="text-align: right;">Any two ✓✓</p>	(2)
7.4	<p><b>Advantages of online ...</b></p> <ul style="list-style-type: none"> <li>• Saves time</li> <li>• Convenient</li> <li>• Save on transportation costs</li> </ul> <p style="text-align: right;">Any two ✓✓</p> <p><b>NOTE:</b> Award mark for any relevant answer</p>	(2)
7.5	<p><b>Decline in piracy</b></p> <ul style="list-style-type: none"> <li>• With a subscription model, users must pay regularly (usually monthly or annually) to maintain access to the software.</li> <li>• Subscription-based software often requires users to authenticate their details online. This process ensures that only paying customers can access the software</li> <li>• Many subscription-based software offerings operate on cloud-based platforms. This setup allows the software provider to control access centrally</li> <li>• Subscription models frequently include automatic updates and enforcement of licensing. These features can detect and disable</li> </ul>	(1)



	unauthorized copies of the software Any one ✓	
7.6	<b>Recycling old computer parts contributes to green computing</b> <ul style="list-style-type: none"> <li>• Conserves resources: You don't use resources to manufacture new parts</li> <li>• Saves energy: You don't use electricity/energy to manufacture new parts</li> <li>• Reduction in e-waste</li> </ul> Any two ✓✓ (2)	
		<b>[10]</b>

**QUESTION 8: SOLUTION DEVELOPMENT**

8.1.1	<b>Begin page numbering on the second page</b> (In the "Options" group, check the box that indicates) 'Different First Page' ✓	(1)
8.1.2	<b>Begin page numbering on the second page start at 1</b> Change the 'start at' page number ✓ to 0 (zero) ✓	(2)
8.2	<b>Table of figures</b> The number associated with the figure (e.g., "Figure 1," "Figure 2") ✓ A brief description, caption or title of the figure ✓ The page number where the figure appears in the document ✓	(3)
8.3.1	<b>Merge the parts of code</b> Use the concatenate/concat function ✓ Use the '&' character ✓	(2)
8.3.2	<b>Oldest date returned</b> 23/11/2003 OR the oldest date ✓	(1)
8.3.3	<b>Data labels vs data table</b> 	(2)



8.4	<p><b>Why insert image in same folder</b></p> <ul style="list-style-type: none"> <li>• Easier to manage files since all related resources are in one place</li> <li>• Easily accessible by the HTML code</li> <li>• Easier to move or transfer the entire webpage to another location or server</li> <li>• Shorter file paths when referencing the images in the HTML code</li> <li>• Faster loading times</li> </ul> <p style="text-align: right;">Any two ✓✓ (2)</p>	
8.5	<p><b>The purpose of TotalSales: [QuantitySold] * [UnitPrice]</b></p> <p>This formula will multiply the value of the 'QuantitySold' field ✓ with the value in the 'UnitPrice' field ✓ and display the result in a field named 'TotalSales'</p> <p><b>NOTE:</b> The candidate must indicate that if it's a field</p>	(2)
		<b>[15]</b>

**TOTAL SECTION B: [75]**



## SECTION C

### QUESTION 9: INTEGRATION

9.1.1	<p><b>Why is OCR more complex than normal scanning</b></p> <p>OCR technology allows for text extraction and editing from scanned documents ✓ /OCR technology changes the text content of the scanned document to editable text</p>	(1)
9.1.2	<p><b>Challenges of OCR</b></p> <ul style="list-style-type: none"> <li>• Accurate character recognition</li> <li>• Keeping the formatting of the scanned document</li> <li>• Handling non-standard fonts and layouts (Stylized or Decorative Fonts)</li> <li>• Text on documents with complex backgrounds, such as watermarks</li> </ul> <p style="text-align: right;">Any two ✓✓</p>	(2)
9.2.1	<p><b>Defrag is done on what component</b></p> <p>Hard disk ✓</p> <p><b>NOTE:</b> Do not accept SSD, flash drives or any storage device that stores data electronically</p>	(1)
9.2.2	<p><b>How defrag increase performance</b></p> <p>Defragmentation reorganizes scattered data fragments, placing them contiguously on the disk/puts together parts of files ✓</p> <p>As a result, the read/write head can access data more efficiently, reducing the seek time/speeds up performance of computer ✓</p>	(2)
9.3.1	<p><b>Component on motherboard and graphics card</b></p> <p>Graphics Processing Unit ✓</p>	(1)
9.3.2	<p><b>Purpose of the GPU and CPU</b></p> <p>GPU: The main purpose of the GPU is to handle the rendering of images, graphics, and visual effects. ✓</p> <p>CPU: The main purpose of the CPU is to execute instructions/perform calculations for various tasks and processes ✓</p>	(2)
9.4	<p><b>CPU factors</b></p> <p>The speed/GHz of the CPU and the number of cores</p> <p><b>NOTE:</b> Do not accept answers related to the physical connection e.g. ZIF-socket or CPU socket</p>	(2)
9.5	<p><b>Black server screen</b></p> <p>Inappropriate resolution settings✓, or outdated graphics drivers ✓</p>	(2)



9.6.1	<p><b>Upgrade one component</b> Memory/RAM ✓ <b>AND</b></p> <ul style="list-style-type: none"> <li>Windows 11 requires a minimum of 4 GB of RAM, other programs will require additional memory resources</li> <li>Disabled user would typically use screen readers, eye-tracking devices that require more RAM</li> </ul> <p style="text-align: right;">Any one ✓</p>	(2)
9.6.2	<p><b>Storage devices</b> 512GB NVMe SSD ✓ 1TB HDD ✓ <b>AND</b> SSD: Install the operating system and other programs frequently used/programs that require fast processing ✓ HDD: Used to store data like photos, documents etc. ✓</p>	(4)
9.6.3	<p><b>Installing a browser</b> Operating systems (like Linux Ubuntu and Windows) comes pre-installed with a browser (Edge, FireFox) therefore installing a browser is not necessary ✓</p>	(1)
9.7	<p><b>Hands-free phone calls etc.</b> Voice-recognition software ✓</p>	(1)
9.8	<p><b>Communication software</b></p> <ul style="list-style-type: none"> <li>Skype</li> <li>Teams</li> <li>WhatsApp</li> <li>Zoom</li> </ul> <p>Any one ✓ <b>NOTE:</b> Award mark for any software that uses VoIP</p>	(1)
9.9	<p><b>Use Google docs as main word processing program</b> No, ✓ Google Docs has a limited set of word-processing features compared to other applications ✓</p>	(2)
9.10	<p><b>CSS in websites</b> CSS is used for styling and formatting of websites ✓</p>	(1)
		<b>[25]</b>



## QUESTION10: INTEGRATION

10.1.1	<b>Type of network required</b> Intranet ✓	(1)
10.1.2	<b>Type of connection needed</b> They will use an internet connection ✓	(1)
10.1.3	<b>Authentication needed</b> The staff will have to enter their usernames ✓ and passwords ✓	(2)
10.2	<b>Email subject line</b> The subject line provides a brief indication of the email's content ✓	(1)
10.3	<b>Incognito/InPrivate</b> <ul style="list-style-type: none"> <li>• Downloaded Files</li> <li>• Bookmarks</li> <li>• Extensions/add-ons</li> <li>• Forms and Autofill Data</li> </ul> <p style="text-align: right;">Any two ✓✓</p>	(2)
10.4	<b>Vodcast &amp; vlogging</b> Both use video content ✓	(1)
10.5	<b>Physical effects of VR</b> <ul style="list-style-type: none"> <li>• Motion sickness</li> <li>• Disorientation/balance</li> <li>• Eye Strain</li> </ul> <p style="text-align: right;">Any one ✓</p>	(1)
10.6	<b>Antivirus installed on a server fails to protect devices</b> <ul style="list-style-type: none"> <li>• When a device is not connected to the server's network, the server has no access to the activities or potential threats on the disconnected device.</li> <li>• When a device is not connected to the network, scanning cannot occur.</li> <li>• When a device is disconnected from the network, it may not receive new updates in a timely manner, potentially leaving it vulnerable to new threats.</li> </ul> <p style="text-align: right;">Any two ✓✓</p>	(2)
10.7	<b>Theft of time and theft of services</b> <i>Theft of time</i> is when employees do personal work while being at work/receiving payment for work not done. ✓ <i>Theft of services</i> involves using company resources for personal matters ✓	(2)
10.8	<b>What is Crowdfunding</b> Crowdfunding is a fundraising method that involves raising small amounts of money from many people✓, typically via online/internet/social media platforms ✓	(2)

10.9	<b>Fake news</b> It is intentionally ✓ misleading content online ✓ used to influence opinions, push agendas, or create confusion	(2)
10.10	<b>Hyperlink</b> <ul style="list-style-type: none"> <li>• A location within the same document</li> <li>• A different document</li> <li>• An email address</li> </ul>	Any two ✓✓ (2)
10.11	<b>Basic structure of a webpage</b> <pre> &lt;html&gt;   &lt;head&gt;     &lt;title&gt;     &lt;/title&gt;   &lt;/head&gt;   &lt;body&gt;   &lt;/body&gt; &lt;/html&gt; </pre>	(2)
10.12	<b>Row span vs col span</b> Row span: merge cells in a row (horizontal) ✓ Col span: merge cells in a column (vertical) ✓	(2)
10.13	<b>Criteria in a query</b> Criteria A: All entries that end with 'town' will be returned ✓ Criteria B: All entries that are equal to 'town' will be returned ✓	(2)
		[25]

**TOTAL SECTION C: [50]**

**GRAND TOTAL: [150]**