

MARKING GUIDELINES

EXAMINATION NATIONAL SENIOR CERTIFICATE	
GRADE	12
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SUBJECT	COMPUTER APPLICATIONS TECHNOLOGY
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SOUTH AFRICAN COMPREHENSIVE ASSESSMENT INSTITUTE
SUID-AFRIKAANSE KOMPREENSIEWE ASSESSERINGSINSTITUUT

FINAL APPROVED MARKING GUIDELINES	
DATE OF MEETING	
UMALUSI MODERATOR	
CHIEF MARKER	
INTERNAL MODERATOR	



MARKING GUIDELINES

- 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 **orange 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

QUESTION 1: MATCHING ITEMS			
1.1	J	✓	(1)
1.2	A	✓	(1)
1.3	P	✓	(1)
1.4	O	✓	(1)
1.5	N	✓	(1)
1.6	G	✓	(1)
1.7	I	✓	(1)
1.8	E	✓	(1)
1.9	T	✓	(1)
1.10	C	✓	(1)
(10)			

QUESTION 2: MULTIPLE CHOICE			
2.1	C	✓	(1)
2.2	B	✓	(1)
2.3	A	✓	(1)
2.4	A	✓	(1)
2.5	D	✓	(1)
(5)			

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, Attributes/properties	✓	(1)
3.2	False, History/caching	✓	(1)
3.3	False, Metadata	✓	(1)
3.4	False, Virtual reality	✓	(1)
3.5	False, Artificial Intelligence/AI	✓	(1)
3.6	True	✓	(1)
3.7	False, *.txt	✓	(1)
3.8	True	✓	(1)
3.9	True	✓	(1)
3.10	True	✓	(1)
(10)			

TOTAL SECTION A: [25]



SECTION B

QUESTION 4: SYSTEM TECHNOLOGIES			
4.1	Two types of system software Operating systems ✓ Utility software ✓ Note: Do not accept any examples e.g., Windows, iOS, device drivers etc.		(2)
4.2	Identify and explain icon Shortcut ✓ Double click the shortcut to open a file or folder/opens the location where the shortcut points to. ✓		(2)
4.3	Computer is slow • Malware or Viruses • Outdated operating system or drivers/unoptimised software • Too many startup programs/background processes and services running in the background • Low disk/storage space • Corrupted system files Any two ✓✓		(2)
4.4	4.4.1	Zombie vs botnet Zombie: A single computer that has been infected with malware and is being controlled remotely by an attacker (it is part of a botnet). ✓ Botnet: A network of multiple compromised computers (zombies) controlled by a single entity (often called a botmaster) ✓	(2)
	4.4.2	DoS Denial of Service ✓ The targeted system or network will become unavailable to users/users will not be able to use the system or network (causing a denial of service). ✓	(2)
4.5	Device driver sources Device drivers can be: • Installed from the operating system. ✓ • Downloaded (and installed) from the internet. ✓ • Installed from the device itself/ Included with the device. ✓		(3)



4.6	Ultrabook vs tablet Ultrabook ✓ AND • Ultrabooks typically come with a physical keyboard. • Ultrabooks offer more precise cursor control. • Ultrabooks have more robust multitasking capabilities (allowing users to work with multiple applications simultaneously). • Ultrabooks have more powerful processors and greater processing capabilities. • Ultrabooks are compatible with a wide range of peripherals (external mice, printers, and scanners etc.). Any two ✓✓	(3)
4.7	Specifications for new software Graphics card specifications ✓ Not all programs need intensive graphics processing/the onboard graphics will be sufficient for general document processing. ✓	(2)
4.8	Upward compatibility Older software can work with files or data created by newer versions (often with limited functionality). ✓✓	(2)
4.9	Screen shot in Windows 11 Snipping Tool/Snip & Sketch ✓ Print screen ✓	(2)
4.10	Distribution model where users pay a recurring fee Subscription-based software ✓	(1)



4.11	4.11.1	Geotagging in video conference Verify participant locations/see where participants are joining from/ prevent unauthorised users from joining based on location. ✓	(1)
	4.11.2	Video conferencing software • Zoom • Microsoft Teams/Skype (for Business) • Cisco Webex • GoToMeeting • Google Meet • Adobe Connect • BlueJeans Any one ✓ NOTE: Do not accept FaceTime, WhatsApp, Google Duo, Facebook Messenger, Snapchat, Viber and Hangouts as these are video calling software.	(1)
			(25)



QUESTION 5: NETWORK AND INTERNET TECHNOLOGY		
5.1	Internet of Things The Internet of Things (IoT) is a network of (smart) devices ✓ that connect and share data over the internet. ✓	(2)
5.2	Uses of NFC • Contactless payments • Access control • File transfer/data exchange • Healthcare applications (access to medical records or tracking medical equipment by tapping NFC-enabled devices). • Gaming (NFC can be used for interactive gaming experiences by tapping physical objects (e.g., cards or figurines) to a gaming console or device) • Inventory and asset management Any two ✓✓	(2)
5.3	Web-based application - negative aspects • Web browser compatibility issues/compatibility and performance may vary across different web browsers • Limited customisation options for applications • Dependence on the external server/service provider's infrastructure and reliability • Storing and processing data in the cloud may raise privacy concerns • Limited performance for intensive tasks/Web-based applications may be slower compared to local applications NOTE: Do not accept security-related issues and an internet connection. Any two ✓✓	(2)
5.4	Smartphone as a hotspot – disadvantage • The process consumes a significant amount of the smartphone's battery power. • Increased data usage (especially if multiple devices are connected). • Slow internet speed for connected devices. Any two ✓✓	(2)



5.5	Restrict the access rights of users – LAN - Prevent unauthorised individuals from viewing, modifying, or deleting files/ maintaining the confidentiality and privacy of sensitive information. - Preventing users from making unauthorised changes to network settings. - In the event of a security incident or unauthorised activity, it becomes easier to identify the responsible party. - To control access to shared resources such as files, printers, and servers/ ensure that network resources are used efficiently. - Help contain the impact of malware. Any three ✓✓✓	(3)
5.6	Streaming videos - video stalls and freezes - Pause the video and allow it to buffer. - Lower the video quality of the video. - Close any unnecessary background applications using the internet. - Update browser or streaming app. - Use a different browser or app. Any two ✓✓	(2)
5.7	Block unwanted advertisements - Install ad-blocking applications/browser extensions. - Enable built-in browser ad blockers. - Implement strict content filtering on the website. - Use a DNS (Domain Name System)-based ad-blocking service. Any two ✓✓	(2)
		(15)



QUESTION 6: INFORMATION MANAGEMENT		
6.1	Citations vs Footnotes - Citations are <u>references</u> to the sources (of information) used in a document, paper or academic work. ✓ - Footnotes are <u>explanatory notes or comments</u> providing additional information or explanations placed at the bottom of a page/document. ✓	
		(2)
6.2	Asterisk (*) in questionnaire Indicates that the information in those fields is mandatory or required. ✓	
		(1)
6.3	URL-shortener - Takes up less space when character count is limited. - Easier to remember. - Easier to share/type. - Edit/update the destination URL without changing the shortened link. - Some URL shortening services allow users to create branded short URLs. - URL shortening services can provide an added layer of security. Any two ✓✓	
		(2)
6.4	6.4.1	Combo vs List box Combo box ✓ because it only displays the selected item in the text box when collapsed/not all items are displayed. ✓ NOTE: Do not award the mark if the candidate indicated that it takes up less space.
		(2)
	6.4.2	Combo vs List box List box ✓ because users can select more than one item from a list. ✓
		(2)
6.5	Cached web page information - Users may see outdated content. - Cached versions may not accurately represent the most up to date information of the dynamic/changed content. Any one ✓ NOTE: Do not award marks for any security related answer.	
		(1)
(10)		



QUESTION 7: SOCIAL IMPLICATIONS		
7.1	Online marketing Global reach and accessibility: The internet transcends geographical boundaries, enabling businesses to connect with potential customers worldwide. ✓ Cost-effective marketing channels: Digital marketing strategies, such as social media marketing, search engine optimisation (SEO), and email marketing, often have lower costs compared to traditional print or broadcast advertising. ✓	(2)
7.2	SSD – green computing SSD has low power consumption. ✓	(1)
7.3	Technological convergence They can use a single device ✓ for multiple purposes. ✓	(2)
7.4	Online shopping and paying with bitcoin • Reduces the risk of identity theft and fraud. • Personal information is not necessarily tied to the wallet address. • Bitcoin transactions are resistant to hacking. • You don't need to provide personal information (reducing the risk of identity theft). Any two ✓✓	(2)
7.5	Received message might be a hoax • Messages promising unbelievable deals, lottery winnings etc. • Messages create a sense of urgency, pressure to act quickly. • Ask for personal information, passwords, credit card numbers etc. • Hoax messages often use generic greetings like 'Dear Customer'. • Poor spelling and grammar. • Scammers may use email addresses that resemble official ones but have slight variations. • If a message lacks a physical address, phone number etc. Any two ✓✓	(2)
7.6	Private browsing The following items will not be stored/saved: • Browsing history • Cookies • Search history • Login credentials Any one ✓	(1)
(10)		



QUESTION 8: SOLUTION DEVELOPMENT			
8.1	8.1.1	Given field used as primary key No, ✓primary key fields must contain unique values/duplicate values can exist in all the fields given. ✓ NOTE: Do not award mark if no/incorrect motivation is given.	(2)
	8.1.2	Address field as a single field • Easier to search or filter by city, suburb, or street individually. • Easier to ensure each individual part of the address is entered correctly. • If a city name changes, updating a single column is easier than modifying full addresses. Any two ✓✓	(2)
8.2	Input Mask vs Validation Rule Input Mask: Provides a guide for data entered. ✓ Validation Rule: Restricts the type or range of data that can be entered into a field / defines criterion that the entered data must meet. ✓		(2)
8.3	Type of file CSV ✓		(1)
8.4	8.4.1	Page break vs section break A page break is used to force the start of a new page/content following the page break will start on the next page. ✓ A section break is used to divide a document into sections each of which can have different formatting settings. ✓	(2)
	8.4.2	Change text in the footer of the last page Next page break ✓ Link to previous should be turned off. ✓	(2)
8.5	Merge field • Merge field automatically inserts information/values from a data source. • A merge field is a placeholder for data that is inserted into a document. Any one ✓		(1)



8.6	Round vs formatting - The ROUND function ensures accurate calculations by changing the underlying numerical values. - Formatting only affects how the numbers are displayed without altering the actual values. Any one ✓	(1)
8.7	HTML line doesn't adjust A fixed width is specified in pixels / the width is not specified in percentage. ✓	(1)
8.8	All text bold - The tag wasn't properly closed. / was omitted. - The closing tag is in the wrong place. Any one ✓	(1)
		(15)
TOTAL SECTION B: [75]		



SECTION C: INTEGRATED SCENARIO

QUESTION 9: INTEGRATION			
9.1	Entry level computers • Sufficient for Basic Tasks: Entry-level computers are capable of handling everyday tasks such as web browsing, word processing, email, etc. • Energy Efficiency: Entry-level computers often have lower power consumption. • Space-Saving: Entry-level computers are often compact and take up less physical space. • Ease of Use: These computers are designed to be user-friendly and accessible. • Cost-Effectiveness: Entry-level computers are typically more affordable than mid-range ones, reducing initial setup costs. Any two ✓		(2)
9.2	9.2.1	Unit of the number of images captured Frames per second / FPS ✓	(1)
	9.2.2	Optical vs digital zoom Optical zoom ✓ AND • Optical zoom physically adjusts the camera lens to magnify the image. • Digital zoom enlarges the image (digitally), often resulting in a loss of clarity and detail. Any one ✓ NOTE: Do not award the mark if the candidate specifies better quality as a motivation, it is given in the question.	(2)
9.3	New HDMI connection New HDMI cables can support Ethernet connection. ✓		(1)
9.4	Creative Commons vs copyright Copyright is an automatic right that grants exclusive control to creators. ✓ Creative Commons offers a voluntary licensing system that allows creators to customise the permissions. ✓		(2)



9.5	9.5.1	USB-C reversible design The cable can be plugged in either way (no more flipping/turning the cable). ✓	(1)
	9.5.2	USB-C advantage • USB-C is a universal standard. • USB-C supports higher data transfer speeds. • Allow higher power levels to be delivered over the cable. • It can support video output, audio input and output. • USB-C connectors are smaller and thinner Any two ✓	(2)
9.6		High-end CPU vs entry-level CPU • More cores / better multithreading capabilities • Larger cache size • Higher clock speeds • They have better cooling solutions Any two ✓✓	(2)
9.7	9.7.1	OS not loading - software • The operating system files may be corrupted or damaged. • The boot configuration might be corrupted or misconfigured. • Incompatible or corrupted device drivers can cause boot failures. • Incorrect BIOS/UEFI settings (e.g., disabled boot device). Any two ✓✓	(2)
	9.7.2	OS not loading – hardware • The hard drive might be failing or has bad sectors. • Bad or failing RAM modules. • The MBR or boot sector may be corrupted. • Loose or disconnected hardware components. • Insufficient power supply or a failing power supply. • Damaged Motherboard. • Overheating can cause the system to shut down or fail to boot. This can be due to a malfunctioning cooling system or blocked air vents. Any two ✓✓	(2)



9.8	Web browser security • Web browsers establish secure and encrypted connections between users and websites/use of HTTPS/displaying a padlock. • Built-in features to detect and warn users about phishing/unsafe websites. • Scan downloaded files for malware. • Web browsers allow owners to define rules for how resources should be loaded. • Web browsers provide tracking prevention, cookie management, and incognito/private browsing modes. • Web browsers come with built-in password managers. Any two ✓✓	(2)
9.9	Biometric security on laptops • Fingerprint Scanning • Facial Recognition • Iris or Retinal Scanning • Voice recognition Any three ✓✓✓	(3)
9.10	Data transfer between digital cameras and personal computers • Wireless transfer methods (Wi-Fi and Bluetooth). ✓ • USB/USB-C connectivity. ✓ • Cloud-based solutions (allow synchronisation between devices). ✓	(3)
(25)		



QUESTION 10: INTEGRATION			
10.1	10.1.1	Explanation of intranet An intranet is a private network used within a company or organisation. ✓ It works like the internet ✓ but is only accessible to employees or members. ✓	(3)
	10.1.2	VPN - security of an intranet • Data transmitted between user and intranet is secure/encrypted (protected from eavesdropping). • Strong authentication mechanisms are implemented (e.g., usernames, passwords, digital certificates, MFA). • VPN server assigns the user a different IP address (concealing the user's actual location and identity). • VPN logs can be used to track user activities, identify potential security incidents. Any two ✓✓	(2)
	10.1.3	Firewall - security of an intranet • A firewall regulates which devices and users are allowed to communicate with the intranet. • Detect and block malicious traffic. • The firewall analyses and controls network traffic based on the specific applications or services being used. • Firewalls monitor network traffic for suspicious patterns or known attack signatures/detect and block malicious traffic. Any two ✓✓	(2)
10.2	Wireless LAN speed • Other electronic devices/Wi-Fi networks/appliances can cause interference. • Physical obstructions can weaken the wireless signal. • Distance from the router/access point too far. • Multiple devices connecting to the same Wi-Fi network simultaneously. Any two ✓✓		(2)
10.3	Extend Wi-Fi coverage • Wi-Fi Range Extender (Wireless repeater) • Mesh Wi-Fi System Any one ✓		(1)



10.4	10.4.1	Part of the body subjected to CTS The wrists and hands ✓	(1)
	10.4.2	Ergonomically designed devices • An angled/padded wrist rest that supports the hand and wrist. • Ergonomic keyboard: A split or contoured keyboard promotes natural wrist alignment. • Ergonomic mouse – Fits the natural shape of the hand to prevent wrist pain and repetitive strain injuries (RSI). • Adjustable office chair – Supports the back, neck, and arms to promote good posture and reduce discomfort. • Standing desk – Allows users to switch between sitting and standing for better posture and less fatigue. • Monitor stand – Elevates the screen to eye level, reducing neck strain. Any two ✓ NOTE: Any answer that relates to ergonomically designed devices.	(2)
10.5	Phishing email Watch out for: • generic greetings. • urgent or threatening language. • misspellings or poor grammar. • requests to provide personal or financial information. • too-good-to-be-true offers. Any two ✓✓ NOTE: Answers must be related to the message/body of the email. Do not accept answers like double-check the email sender's address, enable spam filters or ensure that your antivirus software, and operating system is up to date.		(2)



10.6	Cyberstalking and cyber bullying Online cyberbullying refers to aggressive and intentional behaviour ✓ aimed at causing harm ✓ to others through digital communication channels. Online cyberstalking involves an obsessive focus on an individual/tracking their online activities/sending threatening messages ✓ and attempting to control their virtual presence. ✓ NOTE: One mark for the behaviour/actions and the second mark for the purpose/what the perpetrator aims to achieve.		(4)
10.7	10.7.1	The <a...> anchor The <a> (anchor) element in HTML is used to create hyperlinks. ✓	(1)
	10.7.2	Purpose of href="webpage1.html" The webpage1.html will be displayed ✓ when the picture is clicked.✓	(2)
10.8	Prevent editing of spreadsheet cells Implement cell protection/lock cells ✓ and set a password for certain cells.✓		(2)
10.9	Replace the formula 2*2*2 POWER ✓		(1)
(25)			
TOTAL SECTION C: [50]			
GRAND TOTAL: [150]			