basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

COMPUTER APPLICATIONS TECHNOLOGY P2

MAY/JUNE 2026

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 22 pages.

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

QUESTION 2: MATCHING ITEMS

2.1	E ✓	SUMIFS	1
2.2	F ✓	proprietary software	1
2.3	N ✓	information	1
2.4	O ✓	microphone	1
2.5	B ✓	digital footprint	1
2.6	Q ✓	OCR	1
2.7	G ✓	Blu-Ray disc	1
2.8	D ✓	bandwidth	1
2.9	R ✓	default value	1
2.10	H ✓	emoticons	1
		Total: [10]	

QUESTION 3: TRUE/FALSE ITEMS

(Note to marker: • *In Question 3.1, 3.3, 3.4 and 3.5 candidates need to provide the correct term, e.g. Motherboard, in order to get the mark* • *<u>Award the mark if the correct answer is given without the word FALSE</u>* • *Do NOT award the mark if only the word FALSE is given without the correct answer)*		
3.1	False, motherboard ✓	1
3.2	True ✓	1
3.3	False, abstract ✓	1
3.4	False, ALT ✓	1
3.5	False, Intranet ✓	1
		[5]

TOTAL SECTION A: 25

SECTION B

QUESTION 4: SYSTEMS TECHNOLOGIES

4.1	***Definition of GUI*** An interface through which a user interacts with a device/ computer ✓ AND ***TWO GUI features that are often used*** (1) Icons (2) Toolbars (3) Menu usage/Navigation (4) Checkboxes/Radio buttons (5) Dialog boxes/Command buttons (6) Lists/Combo boxes (7) Spin controls (8) Windows (9) Pointer/mouse pointer/cursor (10) Buttons (11) Scrollbars (12) Tabs ✓✓ (Any two)		3
4.2	***TWO specialised input devices for users who are physically challenged*** (1) Sip-and-Puff switch/Switch device/single switch/large button switch/head switch/foot switch/eye-blink switch (2) Camera for: Head-tracking devices/Head operated pointer/ Eye movement tracking/gaze detection system (3) Adaptive keyboards: Large letter print keyboard (not a Braille device) (4) Oversized buttons on devices/Large key keyboard (5) Foot-operated mouse/foot pedal/foot-operated device (6) Trackball (7) Mouth-operated joystick/adapted/assistive joystick ✓✓ (Any two) *(Note to marker: Any TWO from any bullet even from the same bullet)*		2
4.3.1	***Software to enable communication between system software and peripherals*** Drivers/device drivers ✓	1	

4.3.2	***Process of plug-and-play*** (1) New device automatically detected ✓ (2) Device automatically configured/installed ✓	2	
4.3.3	***What type of software is Disk Cleanup*** Utility ✓ software	1	
4.3.4	***TWO ways in which Disk Cleanup is used to free up disk space*** (1) Delete files from temporary internet folder (2) Delete files from temporary downloaded program files (3) Delete Thumbnails files (4) Delete files from Recycle bin (5) Removes downloaded program files (6) Removes system error reports/memory dump files (7) Removes old Windows update files/Windows.old folder (8) Compresses old files (legacy versions) (9) Remove log files/Windows error reports ✓✓ (Any two)	2	6
4.4	***ONE way to activate newly installed software*** (1) Serial numbers/keys/enter a product key/activation key/licence key (2) Activation codes/scan a QR activation code (3) Online login details/register with the vendor (4) By completing the activation process via phone/SMS/internet/email ✓ (Any one)		1
4.5	***TWO actions a user can take when a software bug is encountered*** (1) Check for updates (2) Check for patches (hotfix)/service pack (3) Report the bug (4) Check the developer's website (5) Make use of forum/support page for known issues and fixes/search online for a documented workaround (6) Reinstall the software (7) Roll back to previous (working) version ✓✓ (Any two)		2

4.6	***Function of ROM in a computer system*** Stores permanent, non-volatile instructions (firmware/BIOS) needed to start/boot the computer ✓		1
4.7	***TWO types of output (not devices) in the information processing cycle*** (1) Text (2) Graphics (3) Audio (4) Video (5) Touch output e.g. vibration/haptic feedback (6) Output that requires no human intervention (e.g. where output activates other devices without human intervention actions) ✓✓ (Any two)		2
4.8	***TWO factors to consider when buying a scanner*** (1) Resolution (2) Connection method (3) Pages per minute (4) Additional software included (5) Image quality/colour depth (6) OCR capability (7) Type of scanner (flatbed, sheet-fed, handheld, drum) (8) Size of documents supported (A4/A3/larger) (9) Operating system compatibility (10) Duplex (double-sided) scanning support/ADF (automatic document feeder) availability (11) Warranty/supplier support (12) Cost/price (with qualification) (13) Energy efficiency ✓✓ (Any two)		2
4.9	***TWO options from the printer queue dialog box*** (1) Pause (2) Resume/(Re)start (3) Cancel/Delete (4) View printer status messages (e.g.: Offline/paper jam/toner/ink level) (5) Access printer settings or preferences (6) Change (re)order/priority of jobs ✓✓ (Any two)		2

4.10.1	***Explain multi-core processor*** (1) Multiple cores on a <u>single</u> CPU/processor chip (2) Each core acts as an individual processor ✓ (Any one)	1	
4.10.2	***How multi-core processors improve performance*** (1) Each core can execute instructions independently and concurrently (2) Enables true multitasking – each core can handle a separate task (3) Splits workload across cores, reducing processing time ✓ (Any one)	1	2
4.11	***TWO disadvantages of a 3D printer*** (1) Emissions may possibly be toxic (smelly/odour)/resin is toxic (2) Hot components can be dangerous (3) Specialised skill is needed/specialised software is needed (4) Not all objects can be created/printed (5) Not suitable for mass production (6) Expensive consumables (filament, resin, special materials) (7) Slow printing speed for complex/large objects (with qualification) (8) High power consumption during long prints (9) Specialised materials required ✓✓ (Any two)		2
			[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1.1	***Network components in the diagram*** A: Network communication device (switch/hub) ✓ B: (Wireless) Router/Wi-Fi router/Access point/WAP ✓	2	
5.1.2	***Integrated component to connect cable to a computer*** NIC (network interface card) ✓	1	
5.1.3	***Reasons for wired connection to connect devices*** (1) Faster data connection speed (2) More stable connection (3) Less prone to interference (4) More secure/harder to intercept than radio signals (5) Not affected by physical barriers/walls (6) Additional devices do not influence performance speed ✓✓ (Any two)	2	5
5.2.1	***Explanation of a web browser*** A web browser is a program which is used to display/navigate/access/retrieve websites/interprets HTML ✓	1	
5.2.2	***Explanation of a search engine*** A search engine is a program/website which finds webpages on the internet using certain key words or phrases ✓	1	2
5.3	***TWO services provided by an ISP apart from internet access*** (1) E-mail services/Fax to e-mail (2) Web hosting (3) Cloud services/Streaming services (4) Domain registration (5) VoIP (Voice over IP) services/Mobile data/SIM services (6) VPN (Virtual Private Network) services (7) Technical support/Repairs (8) Security services/Spam/Virus filtering/Static IP (9) Wi-Fi hotspot access (paid or free) ✓✓ (Any two)		2

5.4	***The process of multiple computers sharing processing power AND an example*** Grid computing ✓ ***Example*** (1) Crypto mining (2) Astronomy/Scientific research (3) Business forecasting (4) Weather forecasting ✓ (Any one) *(Note to marker: Accept any other acceptable example/answer e.g.: AI (artificial intelligence), not to person but the complex task)*		2
5.5	***Concept of web caching AND explain the impact on web browser*** Web caching stores copies of frequently accessed web content ✓ (on a local server/on local storage) ***IMPACT*** It speeds up subsequent access to frequently accessed content, reducing load times ✓		2
5.6	***TWO benefits of a pop-up blocker, other than blocking pop-ups and adverts*** (1) Improves security by preventing pop-ups with potential malware (2) Uses less data since ad content is not downloaded/eliminates unnecessary data consumption/bandwidth (3) It improves the browsing speed (less to load/render) (4) Improves user experience (fewer distractions/less clutter) (5) Protects against phishing pop-ups (6) Prevents accidental clicks on harmful/fraudulent links ✓✓ (Any two)		2
			[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1	***TWO examples of good file management practices*** (1) To ensure files/folders have meaningful file names (2) Remove old/unwanted documents (3) Organise the files into appropriate folders and sub-folders/compressed folders (4) Rearrange/Group the files alphabetically/according to type/ chronologically (5) Keep backups of important files (locally and/or in the cloud) ✓✓ (Any two)		2
6.2	***ONE reason for using section breaks in a large research document*** Section breaks are used to apply different formatting to different sections of a document ✓, e.g. margins, borders, page numbering, page orientation, headers and footers, columns, styles, different layouts		1
6.3	***TWO tips a user can follow to avoid unwanted information during research*** (1) Proper use of keywords in searches (2) Familiarise yourself with the content of the topic/only use relevant information (3) Use filtering software (4) Read the abstract for relevance (5) Use advanced search operators (AND, OR, NOT, quotation marks for phrases, minus sign to exclude, add sign to include) (6) Use academic/specialised search engines (Google Scholar, library databases)/credible websites (7) Bookmark/Save reliable sources to avoid repeat searches ✓✓ (Any two)		2
6.4	***ONE characteristic of a focus question*** (1) It must be clear and concise (2) It must be researchable/open-ended (3) It must be relevant to the topic (4) Should be a single question ✓ (Any one)		1

6.5	***Reason for creating a query rather than a filter to extract information from a database table*** (1) Queries can be saved for later use (2) Calculated fields can be applied in queries (3) Queries can use fields from multiple tables (4) Reports can be based on a query ✓ (Any one)		1
6.6	***TWO reasons why an index is needed in a research project*** (1) It helps readers to quickly/timeously find specific information without reading the whole document/user friendly (2) It lists important topics, keywords and page numbers for easy reference (3) It improves the usability and organisation of the document (4) It acts as a navigation tool, especially in long documents, books or reports (5) It helps readers cross-reference related topics ✓✓ (Any two)		2
6.7	***ONE feature available after capturing a source*** (1) References (2) Citation (3) Bibliography (4) Manage Sources/Source Manager ✓ (Any one)		1
			[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1	***Definition of 5IR*** Put the focus back on human and machine interaction/ endeavour ✓ defining the ethics and impact of technology developed in the 4IR ✓		2
7.2	***TWO ways cyber criminals disrupt/damage computer systems*** (1) By implementing DDoS attacks (2) Using ransomware to block access to the system (3) Taking over your computer systems e.g. bots, zombies (4) Security issues e.g. disabling safeguards such as firewalls (5) Spread malware (viruses, worms, trojans) (6) The use of cyber terrorism to attack an organisation's IT systems (7) Social engineering attacks (phishing/identity theft/data breaches/theft of sensitive data) (8) Hacking/unauthorised access/keyloggers to steal data ✓✓ (Any two) *(Note to marker: Any TWO from any bullet even from the same bullet)*		2
7.3	***TWO ways ICT systems can reduce an organisation's financial expenses*** (1) Reduce paper/printing and storage/stationery expenses (2) Make use of cloud computing/sharing devices (3) Automation/Fewer employees reduce monthly salary expenses (4) Online meetings reduce travel and accommodation cost (5) Telecommuting: ICT enables employees to work from home (6) BYOD: Employees use their own devices for work ✓✓ (Any two)		2

7.4	***TWO reasons why it is important to ensure accuracy and validation of data*** (1) Prevents the inaccurate analysis of data (2) Output of data is more credible/Reduces legal liability arising from data errors (3) Decision making will be based on reliable data (4) Incorrect data can lead to financial losses (5) Maintains the organisation's reputation/credibility (6) Customer service: quality and effective communication (7) Prevents duplicate records and inefficiency (8) Saves time: no rework or verification needed ✓✓ (Any two)		2
7.5	***How blockchain technology benefits users in e-commerce*** (1) Cannot be altered/deleted/forged/modified/tampered (2) Decentralised verification: consensus across many nodes, no single central authority/can be verified from any node anywhere (3) No intermediaries: direct peer-to-peer, no bank or payment gateway (4) Lower transaction costs: especially cross-border (5) Faster settlement: no banking hours/ weekend/ correspondent/bank delays (6) Product authenticity and supply-chain traceability: counterfeit reduction (7) Cryptocurrency/alternative payment options: broadens access ✓✓ (Any two)		2
			[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1	***Automatic appearance of date at the top of every page*** Insert a date field ✓ in the header ✓		2
8.2	***Exclude heading from Table of Contents*** (1) Change the style to normal/remove the style (2) Select 'Do not show in Table of Contents' (3) Hide the heading ✓ (Any one)		1
8.3	***ONE example of a data source to create a mail merge document*** (1) Spreadsheet files/CSV files (2) Database files (3) Text files (4) Web Pages (5) Word processing table (6) Outlook contacts/Address book ✓ (Any one)		1
8.4	***Form fields option used AND motivate*** Option A ✓ ***Motivation*** Only one grade can be selected from the list ✓		2
8.5	***Feature used to display learners from the same district together*** Grouping ✓		1
8.6	***Identify TWO errors in the HTML code*** ATHLETIC MEETING</**font**> (1) Font attribute should be font **face/Face** instead of **type** ✓ (2) The **** tag must appear after the text 'ATHLETIC MEETING' ✓		2
8.7	***Using <p> tag as an alternative to the tag*** The <p> tag provides (pre-coded) paragraph spacing before and after the paragraph text ✓, only creates a single line break		1

8.8	***TWO reasons to include comments in an HTML file*** (1) Helps improve code readability (2) Document/explain what the code does for future reference (3) Explanation of specific elements (4) Temporarily disabling HTML sections without deleting it/Prevent information from being displayed on the website (5) Record version, author or modification dates (6) Aids debugging: narrow down where errors are by isolating blocks ✓✓ (Any two)		2
8.9	***When would you use a nested IF statement in a spreadsheet*** When two or more conditions must be tested ✓		1
8.10	***Modify the formula to show number of hours travelled*** =(C5-B5)*24 **OR** =24*(C5-B5) Place subtraction within brackets ✓ Multiply by 24 ✓ *(Note to marker: Do not award the first mark if a function is added)*		2
			[15]

TOTAL SECTION B: 75

SECTION C

QUESTION 9: INTEGRATED SCENARIO

9.1.1	***Size of memory*** Memory**:** 4 GB ✓ *(Note to marker: the number and measurement unit (GB) must be listed)*	1	
9.1.2	***Speed of processor*** Speed: 2.4 ✓ GHz	1	
9.1.3	***Name of the operating system in this computer*** Linux: ✓ Ubuntu	1	
9.1.4	***TWO disadvantages of open-source software*** (1) Problems with software compatibility and peripheral compatibility (2) Multiple versions available/Inadequate standardisation (3) Lack of commercial backing/not widely used (4) Inadequate technical support (5) Maybe prone to viruses and other cyber attacks (6) Not as user-friendly (7) Some advanced features may be missing compared to proprietary software ✓✓ (Any two)	2	5
9.2.1	***TWO responsible ways to discard the damaged printer*** (1) Use the parts that are still usable (2) Take it for recycling/repairing/refurbish (3) Discard it in an e-waste bin/sell it/donate it (4) Return to manufacturer ✓✓ (Any two)	2	

9.2.2	***TWO solutions for an unresponsive printer problem*** (1) Make sure the printer driver is installed (2) Set the new printer as the default printer (3) Make sure the network cables are connected (4) Check that the printer IP on the network is correct (5) Ensure correct sharing permissions/access rights on the network printer (6) Restart the print spooler service on affected machines ✓✓ (Any two)	2	4
9.3	***TWO possible causes why the projector does not display the presentation*** (1) Correct source is not selected (PC/VGA/HDMI, etc.) (2) The cable/wireless signal is not connected to the projector/computer (3) Faulty cable/port on the computer (4) Incorrect display settings (e.g., extended, duplicate, etc.) (5) Faulty/outdated drivers (6) Resolution mismatch between computer output and projector input ✓✓ (Any two)		2
9.4.1	***Feature that was used in the electronic form*** Track changes ✓ ***ONE benefit of using track changes*** (1) Changes by different people can easily be seen (2) Changes can easily be accepted or rejected (3) Each reviewer's changes are identifiable separately (different colours/initials) (4) Original text is preserved alongside edits, easy to revert ✓ (Any one)	2	

9.4.2	***TWO advantages of using an online survey*** (1) Online forms eliminate issues with illegible handwriting (2) Data validation can be built-in, preventing errors (dropdown lists) (3) Members can complete forms on their devices (4) Data is instantly captured and stored, eliminating manual data entry (5) Reduces the need for printing, paper and storage (6) Data is easily stored, organised and searchable (7) Information can be readily accessed and analysed (8) Online forms can be integrated with other systems, such as email marketing/member databases/multimedia (9) You can see the results as they come in (10) Reach a larger/wider audience (11) Easy to update or amend the survey ✓✓ (Any two)	2	4
9.5.1	***ONE change that can be made in the CellNo field properties*** Input mask **OR** 0000000000 **OR** "0"000000000 ✓	1	
9.5.2	***Reason why query does not give desired results*** (1) The '>' symbol will also include Grade 12 (2) The relational operator (>=) is wrong for an exact-match requirement: use '=' ✓ (Any one)	1	2
9.6.1	***TWO disadvantages of using an ISP e-mail as opposed to a free web-based e-mail*** (1) Fewer advanced features (2) E-mail address is tied to your ISP, if you change service providers you lose access (3) May require ISP-specific client configuration (POP/SMTP setup) (4) Smaller mailbox storage than free web-based services ✓✓ (Any two) *(Note to marker: do not accept any marks for cost related answers)*	2	

9.6.2	***TWO reasons for choosing a shaped internet connection*** (1) Contracts packages are normally cheaper (2) Preference is given to specific online services which the club uses (3) More efficient bandwidth allocation when many users share the line ✓✓ (Any two)	2	4
9.7	***TWO safety measures to consider when creating a social media account*** (1) Always select the highest privacy settings (2) Disable location features (3) Choose a strong and unique password (4) Enable two-factor/multi-factor authentication (5) Do not share personal identifying information publicly (ID) (6) Use a strong recovery email and phone number ✓✓ (Any two)		2
9.8	***TWO negative impacts of social networking sites*** (1) Fake news and misinformation (2) Cyberbullying (3) Stress related concerns/Mental health impact (4) Addiction/excessive screen time (5) Reduced face-to-face social skills (6) Sleep deprivation due to late-night use (7) Exposure to inappropriate/age-restricted content (8) Distraction from schoolwork and academic decline (9) Identity theft/impersonation ✓✓ (Any two)		2
			[25]

QUESTION 10: INTEGRATED SCENARIO

10.1.1	***What is two-factor authentication*** A layered security method that requires two forms of identification ✓ other than a username/password ✓ to access resources/data/accounts	2	
10.1.2	***TWO reasons for reading the licence agreement*** (1) To understand what data can be shared with 3rd parties (2) You give permission that your personal data can be collected/stored and shared (3) Know the legal consequences when the app is misused (4) Understand subscription costs, free-trial conversions, hidden fees ✓✓ (Any two)	2	
10.1.3	***ONE reason why the gym app might not install on certain mobile devices*** (1) Compatibility issues with operating system (2) Certain devices may lack updated operating systems (3) Insufficient hardware ✓ (Any one)	1	5
10.2.1	***TWO wearable devices that can synchronise with gym app*** (1) Smart watch/GPS sports watch (2) Smart ring/Smart glasses (3) Fitness tracker/band (4) Heart-rate monitor (chest strap or wrist-worn) (5) Smart clothing ✓✓ (Any two)	2	
10.2.2	***What does synchronise refer to in this scenario*** It will update the latest data from the wearable device to the app ✓	1	

10.2.3	***Type of network AND motivation*** A Personal Area Network (PAN) ✓ ***Motivation*** (1) Connecting only two devices in a small network (2) Connecting only two devices in a short range ✓ (Any one)	2	5
10.3.1	***Both an input and an output device*** Touchscreen ✓	1	
10.3.2	***How POS system finds price*** Identify a code/key/barcode ✓ then searches a database/ source ✓ and returns the corresponding price	2	3
10.4.1	***How biometric authentication improves security*** (1) The physical features of a person are more difficult to hack/duplicate (2) More convenient, user does not have to remember anything ✓ (Any one)	1	
10.4.2	***TWO different biometric devices*** (1) Fingerprint scanner (2) Face recognition device (3) Retinal/Iris scanners (4) Palm/hand-geometry scanner ✓✓ (Any two)	2	3
10.5	***Benefits of machine learning*** (1) Track a user's health and gives appropriate feedback on a user's fitness level (2) Provide personalised recommendations and training plans (3) Adjusts workout intensity and duration (4) Identifies patterns and predicts future performance (5) Customised coaching feedback (6) Adapts goals automatically as the user improves ✓✓ (Any two)		2

10.6	***Which is the most reliable source AND motivate*** Source B ✓ ***Motivation*** (1) It is from an official fitness website (2) Health professionals (3) Accurate and verified ✓ (Any one)		2
10.7.1	***Error message in cell A8*** (1) Cannot find the average of age group (2) Cannot calculate the average because column A is text ✓ (Any one) ***Recommendation*** (1) Delete the formula/Do averages from column B onwards (2) Use A8 as a heading for the row ✓ (Any one)	2	
10.7.2	***Modify the function in cell D8*** Add ROUND/ROUNDUP to the formula/Format to number with zero decimals ✓	1	
10.7.3	***Conclusion to be made about the chart*** The higher the average weekly exercise hours ✓, the higher the quality of life score ✓ ***OR*** Relationship between the average weekly exercise and quality of life score based on age group ***OR*** The average quality of life is always 3 higher than the average weekly exercise in all age groups *(Note to marker: It is about the relationship/correlation between exercise hours and quality of life score)*	2	5
			[25]

TOTAL SECTION C: 50

GRAND TOTAL: 150

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