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Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

COMPUTER APPLICATIONS TECHNOLOGY P2

2023

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 20 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 instances 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	B	✓	1
1.3	C	✓	1
1.4	A	✓	1
1.5	B	✓	1
1.6	D	✓	1
1.7	A	✓	1
1.8	B	✓	1
1.9	D	✓	1
1.10	A	✓	1
Total: [10]			

QUESTION 2: MATCHING ITEMS

2.1	E	✓	1
2.2	F	✓	1
2.3	A / D	✓	1
2.4	J	✓	1
2.5	T	✓	1
2.6	S	✓	1
2.7	C	✓	1
2.8	B	✓	1
2.9	R	✓	1
2.10	H	✓	1
Total: [10]			

QUESTION 3: TRUE/FALSE ITEMS

(Note to marker: In Question 3.1, 3.3, and 3.4:

- Candidates need to provide the correct term, e.g. Motherboard, in order to get the mark
- Award the mark if the correct answer is given without the word FALSE
- Do NOT award the mark if only the word FALSE is given without the correct answer)

3.1	False, Widow ✓	1
3.2	True ✓	1
3.3	False, Relative (cell referencing) ✓	1
3.4	False, Pharming ✓	1
3.5	True ✓	1
		[5]

TOTAL SECTION A: 25

SECTION B**QUESTION 4: SYSTEMS TECHNOLOGIES**

4.1	<p><i>TWO input devices than can be used on a Point of Sales system</i></p> <p>(1) Keyboard/Keypad/Touchscreen (2) Barcode scanner (3) Speed point/Bank card facility machine (4) Scale for measuring weight (of items) (5) NFC reader/QR code scanner</p> <p>✓✓ (Any two)</p>		2
4.2	<p><i>Definition of convergence</i></p> <p>Convergence is where the functionality of two or more devices ✓ are combined in one device ✓</p>		2
4.3	<p><i>TWO reasons why USB ports are commonly used to connect peripheral devices</i></p> <p>(1) High speed data transfer (2) Provides power to devices (3) Computers/Laptops compatible with most external devices (4) Hot swappable (<i>Accept Plug & Play</i>)</p> <p>✓✓ (Any two)</p>		2
4.4	<p><i>TWO specifications to consider when buying a monitor</i></p> <p>(1) Resolution/Pixel density (2) Physical size (3) Contrast ratio/Colour depth (4) Aspect ratio (5) Panel type (curved/flat)/LED/LCD/QLED (6) Refresh rate/Response time (7) Connectivity options</p> <p>✓✓ (Any two)</p>		2
4.5	<p><i>TWO reasons why a monitor does not display anything even though both the computer and monitor are switched on</i></p> <p>(1) Cables/Signal cable not connected properly/faulty (2) Faulty graphics card (3) Display is set to a secondary monitor (4) Sleep mode is active</p> <p>✓✓ (Any two)</p>		2

4.6	<i>TWO limitations of using web-based applications</i> (1) Requires reliable internet connection (2) Requires additional data and sufficient speed (3) Possibility of security risks while online (4) Applications may not be compatible with all web browsers (5) Applications can be much slower than installed ones (6) Applications may not have all the functionality/features of installed ones/may cause formatting changes <div style="text-align: right;">✓✓ (Any two)</div>		2
4.7	<i>TWO ways to complete the installation when a program reports an error message that there is insufficient disk space</i> (1) Delete/Move unwanted programs/data onto an external drive or the cloud (2) Use Disk Cleanup (3) Replace/Add a larger storage device/drive (4) Compress data/folders not frequently used <div style="text-align: right;">✓✓ (Any two)</div>		2
4.8	<i>ONE reason to distribute educational resources on an optical disk</i> (1) Users may not have data/sufficient cap (2) Connectivity issues/slow internet (3) Control the spread of viruses and other malware <div style="text-align: right;">✓ (Any one)</div>		1
4.9.1	<i>ONE disadvantage of using NFC</i> NFC has a low transfer speed ✓ / Will take a long time to transfer photographs or videos	1	3
4.9.2	<i>TWO uses of NFC other than the transfer of photos</i> (1) Making payments (2) Open/Launch an app on other devices (3) Pair/Trigger accessories with device (4) Security purposes, e.g. Unlocking doors/Access control (5) Transfer other kinds of media, e.g. video/documents (6) Printing via NFC <div style="text-align: right;">✓✓ (Any two)</div>	2	

4.10	<p><i>TWO software technologies to assist physically disabled users, who cannot use their hands, to work on a computer</i></p> <p>(1) Voice recognition software (2) Speech-to-text software (3) Eye tracking/Gesture recognition software (4) Virtual assistant</p> <p>✓✓ (Any two)</p>		2
4.11	<p><i>Application to switch off all computers at a certain time in the afternoon</i></p> <p>(1) Task Scheduler (2) LanSchool/EyeSpy/Classroom Spy, etc. (Accept Classroom Management Software)</p> <p>✓ (Any one)</p>		1
4.12	<p><i>TWO risks of using flawed software</i></p> <p>(1) Corrupted data/loss of data/loss of productivity (2) Invalid/Unexpected results (3) Security issues (4) Malware infection (5) Unusual behaviour of computer-controlled devices/temporarily malfunction</p> <p>✓✓ (Any two)</p>		2
4.13	<p><i>TWO advantages of using the Snipping Tool compared to the Print Screen option</i></p> <p>(1) Specific area can be selected (2) The screenshot can be saved directly in different file formats (3) Can edit within the Snipping Tool application (4) The screenshot can be directly attached to an e-mail or added to another application (5) Can print from within the Snipping Tool application</p> <p>✓✓ (Any two)</p>		2
			[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1	Concept of grid computing Processing power ✓ of many computers are combined in order to complete a single task/solve a problem ✓		2
5.2	Communication technology that uses light for data transfer (1) Fibre optic (2) Li-Fi (Light fidelity) (3) IR (Infrared) ✓ (Any one)		1
5.3.1	TWO good practices for managing video conferencing (1) Ensure all participants hear/see the speaker and/or other participants/presentations (2) Have participants mute their microphones if they are not speaking/Mute the participants (3) Give all participants an opportunity to participate, e.g. chat box, hands-up, voice and sharing their screen (4) Enable setting for filtering out background noises/Disallow distracting backgrounds (5) Enable transcripts (6) Record the proceedings of the meeting (7) Add security measures for joining, e.g. waiting room ✓✓ (Any two)	2	4
5.3.2	TWO disadvantages of video conferencing (1) Less in-person contact (2) Possible network instability and time lag/Intermittent software issues (3) Lack of full participation/engagement (4) Participants' inability to use the technology adequately (5) Requires specific hardware, e.g. webcam (6) Data intensive ✓✓ (Any two)	2	
5.4	TWO reasons why users cannot access a file on a network (1) Access rights may prevent users from opening the file (2) Problem with the connection to the server (3) Server is offline (4) The file is corrupt ✓✓ (Any two) <i>(Note to marker: Do NOT accept password)</i>		2

5.5	<p><i>TWO ways to prevent buffering and delays without having to close applications</i></p> <p>(1) Disable automatic updates/Enable data saver (2) Stream at a lower resolution (3) Reduce use of multimedia/Disable automatic video play in certain apps (4) Reduce distance/obstacles between router and user</p> <p>✓✓ (Any two)</p>		2
5.6	<p><i>TWO reasons why instant messaging is widely used</i></p> <p>(1) Easy access to IM apps via smartphones/multiple platforms (2) Real-time communication (3) Easy to create and manage groups (4) Messages are usually secure/End-to-end encryption (5) Additional functionality, e.g. voice call/group call/voice note</p> <p>✓✓ (Any two)</p>		2
5.7	<p><i>TWO reasons for price differences between fibre connections with the same speed</i></p> <p>Throttled ✓ Capped ✓</p>		2
			[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1	<p>TWO aspects to be included in a task definition</p> <p>(1) Problem stated/current situation/Why it is a problem (2) Focus/purpose of the investigation (3) How to go about doing the research (4) Where to look for information/How information will be used (5) Target audience (6) How the information will be presented</p> <p>✓✓ (Any two)</p>		2															
6.2.1	<p>Purpose of questions</p> <table><tr><th>Questions starting with...</th><th>Level</th><th>Purpose of question</th></tr><tr><td>Who, what, when, where, how many</td><td>1</td><td>a) Gather facts ✓</td></tr><tr><td>Why, How</td><td>2</td><td>b) Explore ✓ / Examine</td></tr><tr><td>If, What if</td><td>3</td><td>c) <i>Adjust, alter or predict</i></td></tr><tr><td>Would it be better if ... How can I determine ... What would be the best way ...</td><td>4</td><td>d) /c) Reach a conclusion ✓</td></tr></table>	Questions starting with...	Level	Purpose of question	Who, what, when, where, how many	1	a) Gather facts ✓	Why, How	2	b) Explore ✓ / Examine	If, What if	3	c) <i>Adjust, alter or predict</i>	Would it be better if ... How can I determine ... What would be the best way ...	4	d) /c) Reach a conclusion ✓	3	
Questions starting with...	Level	Purpose of question																
Who, what, when, where, how many	1	a) Gather facts ✓																
Why, How	2	b) Explore ✓ / Examine																
If, What if	3	c) <i>Adjust, alter or predict</i>																
Would it be better if ... How can I determine ... What would be the best way ...	4	d) /c) Reach a conclusion ✓																
6.2.2	<p>ONE reason for using different level questions when doing research</p> <p>(1) To gather enough/varied information (2) To guide your research (3) To add depth to your research (4) To help you order the content when you write your report</p> <p>✓ (Any one)</p>	1	4															
6.3	<p>How to avoid being guilty of plagiarism</p> <p>(1) Acknowledge sources, (e.g. bibliography and citations) (2) Write in your own words/use a paraphrasing tool (3) Do not copy and paste text (4) Use a similarity checker (e.g. Turnitin)</p> <p>✓✓ (Any two)</p>		2															
6.4	<p>TWO reasons why the survey is NOT useful</p> <p>(1) Do not know what this survey is about/No introduction (2) No focus, questions do not all relate to the same context/No guidance for the respondent to answer the questions (3) Difficult to process, e.g. Open-ended questions/Questions are not numbered/Name is irrelevant/should not be asked according to POPIA (4) Clarity of questions not ideal, e.g. Check box used for space where text should be entered/No descriptor for checkbox/Rating scale is illogical/No space to answer question</p> <p>✓✓ (Any two)</p>		2															
			[10]															

QUESTION 7: SOCIAL IMPLICATIONS

7.1	<p><i>TWO ways to reduce the possible negative impact of ICTs on the environment</i></p> <p>(1) Recycle/Reuse old computers/devices/parts (2) Buy energy efficient hardware (3) Switch off computers when not in use (4) Proofread before printing/Print on both sides of the paper/Print 2 pages per sheet/Print in draft/eco-mode (5) Adjust device settings to use less energy, etc.</p> <p>✓✓ (Any two)</p>		2
7.2	<p><i>TWO dangers of sharing your location online</i></p> <p>(1) You could be spammed with location-based advertising (2) You could be stalked and harassed (3) Criminals could target your premises while you are away</p> <p>✓✓ (Any two)</p>		2
7.3	<p><i>ONE way to reduce the spread of fake news when using social media</i></p> <p>(1) Verify the authority of the source/content/Check the facts (2) Do not forward messages that are emotionally charged/not confirmed/seems too good to be true (3) Educate people about fake news (4) Report fake news</p> <p>✓ (Any one)</p>		1
7.4	<p><i>TWO consequences for victims of identity theft</i></p> <p>(1) Others will have access to bank accounts and steal your funds (2) Financial implications, e.g. others are able to take out loans in your name that you will have to repay/You may be blacklisted (3) Reputational damage/Emotional distress as a result of being a victim of identity theft (4) Others can impersonate you so that they can commit fraud/to commit criminal activity</p> <p>✓✓ (Any two)</p>		2
7.5	<p><i>Reason for a screen lock pattern being less secure than a strong password</i></p> <p>(1) Easier to trace the pattern by following the marks (residue) that your fingers have left on the screen (2) Easy for someone to see if they are looking over your shoulder (3) There are a limited number of patterns available/Strong passwords require alphabetical characters, digits and other characters (symbols) offering more combinations</p> <p>✓ (Any one)</p>		1

7.6	<p><i>TWO recommendations to prevent ransomware attacks</i></p> <p>(1) Update all software (2) Install and update antivirus/anti-ransomware software (3) Do not click on links in pop-up windows or phishing e-mails/Spam filtering for less exposure to adware (4) Implement advanced security measures on the network</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
			[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1.1	Purpose of using the ruler bar in a word processing document (1) You can see and set tab stops (2) You can see and adjust the margin settings/alignment (3) You can move table borders (4) You can line up objects/set indentations in a document (5) You can measure the width of columns, objects, etc. ✓✓ (Any two)	2	5
8.1.2	Type of alignment AND its benefit Justify ✓ AND Uniform layout of text on both sides/Give text clean, crisp edges/Looks more professional ✓	2	
8.1.3	ONE way to see the address of the hyperlink in a document (1) Hover the mouse over the hyperlink (2) Right click on the hyperlink and click on Edit Hyperlink (3) Alt+F9 (4) Click on the link and check the address in the address bar of the browser ✓ (Any one)	1	
8.2.1	Spreadsheet feature that completes the list of months in a column Auto Fill ✓	1	5
8.2.2	TWO ways to format the number values in a more meaningful way (1) Apply the Currency/Accounting/Custom number format (2) Format all the cells to 2 decimal places (3) Apply a 1000 separator ✓✓ (Any two)	2	
8.2.3	Reason for incorrect values in D3:D9 VAT was subtracted ✓ instead of added	1	
8.2.4	Function to determine the total of the values in columns B, C and D Use the SUM ✓ function for each column	1	

8.3.1	Reason for input mask of Worker_ID field (1) To enforce a specific format/length (2) Reduce the possibility of input errors ✓ (Any one)	1	5
8.3.2	THREE corrections to the validation rule >=15 and <=65 Remove 'Only', ✓ / The text 'Only' does NOT appear Insert = signs, ✓ / >= <= Change 'Or' to 'And' ✓ / And	3	
8.3.3	ONE reason why the design of the Age field may cause errors (1) Data type is incorrect/Data type of the Age field must be set on Number/Data type of the Age field cannot be a Boolean/ Yes/No value (2) Age field is set as a primary key which will not accept duplicates/is not unique ✓ (Any one)	1	
			[15]

TOTAL SECTION B: 75

SECTION C**QUESTION 9: INTEGRATED SCENARIO**

9.1.1	<i>TWO reasons why the latest Windows OS cannot be installed</i> Processor is too slow/not compatible ✓ Insufficient RAM ✓	2	4
9.1.2	<i>ONE alternative operating system instead of propriety OS</i> A Free Open Source Software (FOSS) operating system ✓/Open Source Software (OSS) operating system <i>(Note to Marker: Accept examples such as Linux, Ubuntu, etc.)</i>	1	
9.1.3	<i>ONE reason why it is NOT advisable to upgrade this computer</i> (1) Computer is too old/Components are too old (2) Compatibility issues between old and new components (3) May be impossible to add more RAM (4) Faster processor may be incompatible with the motherboard ✓ (Any one)	1	
9.2	<i>TWO advantages of using social media platforms when communicating with the public</i> (1) The message can be widely distributed/Easily accessible to a large audience (2) Instant communication/Real-time newsfeeds (3) Free exposure/advertising for the donors of the event (4) Can use multimedia (5) Public can give feedback ✓✓ (Any two)	2	2

9.3.1	<i>TWO reasons why people may not trust a shortened URL</i> (1) There is no indication whether the website is secure (2) The URL could be flagged as spam in the recipient's inbox (3) The URL gives no logical indication of the website they are being directed to <div>✓✓ (Any two)</div>	2	5
9.3.2	<i>THREE benefits of using online forms instead of pen-and-paper based forms</i> (1) Ensures accuracy/Prevents spelling and other input issues (2) Quicker to complete/More efficient as a result of lists to select from (3) Save on paper/ink /More environmentally-friendly method (4) Easy management and analysis of data <div>✓✓✓ (Any three)</div>	3	
9.4.1	<i>Mail merge option for select name tags</i> Edit Recipient List ✓ (Accept Filter)	1	2
9.4.2	<i>A spreadsheet function to select a lucky winner</i> (1) RANDBETWEEN (2) RAND <div>✓ (Any one)</div>	1	

9.5.1	<p>TWO possible reasons for NOT offering free internet access during the event</p> <p>(1) The school does not have sufficient bandwidth for the event (2) The data costs for the event may be too high/Data cap may be used up too quickly during the event (3) Possibility of security issues</p> <p>✓✓ (Any two)</p>	2	4
9.5.2	<p>TWO precautions you can take when using free internet access</p> <p>(1) Do not access personal bank accounts or sensitive personal data (2) Only visit secure sites (HTTPS) (3) Log out of accounts when you have finished using them (4) Disable file sharing (5) Use a VPN when connecting to the internet (6) Update your antivirus after logging on and before continuing to surf the internet</p> <p>✓✓ (Any two)</p>	2	
9.6.1	<p>Concept of crowdfunding</p> <p>Crowdfunding is a process where a business idea/event ✓ is funded by (online) multiple small donations ✓ from volunteer contributors</p>	2	5
9.6.2	<p>ONE crowdfunding platform</p> <p>(1) Indiegogo (6) SeedInvest (2) Kickstarter (7) Patreon (3) BackaBuddy (8) StartEngine (4) GoFundMe (9) Mightycause (5) Crowdcube (10) Twitch TV, etc.</p> <p>✓ (Any one)</p>	1	
9.6.3	<p>TWO spreadsheet features (not functions) to determine the top 10 donations</p> <p>(1) Sort (2) Filter (3) Conditional formatting (4) Pivot tables</p> <p>✓✓ (Any two)</p>	2	

9.7.1	Form of currency that Bitcoin belongs to Crypto (currency) ✓/Digital (currency)/Virtual (currency)	1	3
9.7.2	TWO benefits of making donations in Bitcoin (1) Donations can be made anonymously (2) Very secure method of payment (3) Very low transaction fees ✓✓ (Any two)	2	
			[25]

QUESTION 10: INTEGRATED SCENARIO

10.1.1	E-mail feature to efficiently send an e-mail to many people at the same time Distribution list/Mailing list ✓	1	5
10.1.2	E-mail field to hide multiple e-mail addresses from a recipient Use Bcc field for all e-mail addresses ✓	1	
10.1.3	ONE way to prevent future e-mails from going to the Spam folder (1) Mark as not Spam (2) Add to safe senders' list (3) Create a mailing rule to move the e-mail to a separate folder/inbox (4) Click on the allow message dialog ✓ (Any one)	1	
10.1.4	TWO ways to share a video that is too large (1) Share a link of the folder in the cloud/FTP (2) Compress the file to reduce file size (3) Share through a social media platform, e.g. YouTube, Facebook, etc (4) Use Peer-to-peer networking, e.g. Torrent ✓✓ (Any two)	2	
10.2.1	Explanation of biometric security Technology that is used to identify a person ✓ based on their physical features, ✓ (e.g. fingerprint, iris, voice, etc.)	2	4
10.2.2	TWO disadvantages of using biometric locks (1) Moisture/water affects accuracy of biometric scanning (2) Injury/illness could result in the physical feature not being recognised (3) Dust/dirt/grime can affect accuracy of sensors ✓✓ (Any two)	2	

10.3.1	Database feature to uniquely identify uniquely identify a record Primary key ✓	1	3							
10.3.2	Data type for ChronicConditions field AND motivation <table border="1"><tr><td>Data type</td><td>Motivation</td></tr><tr><td>Memo/Long text</td><td>Brief description of the condition that a person has</td></tr><tr><td colspan="2">OR</td></tr><tr><td>Lookup Wizard</td><td>Select a condition from a list</td></tr></table> One mark for the data type ✓ One mark for a matching motivation ✓	Data type		Motivation	Memo/Long text	Brief description of the condition that a person has	OR		Lookup Wizard	Select a condition from a list
Data type	Motivation									
Memo/Long text	Brief description of the condition that a person has									
OR										
Lookup Wizard	Select a condition from a list									
10.4.1	TWO user-centred design (UCD) guidelines for creating a website (1) Priority content should be suitably placed (2) Consistent themes and layout (3) Appropriate colour contrast (4) Appropriate font sizes (5) Navigation should be consistently placed (6) Clear/appropriate images ✓✓ (Any two)	2	4							
10.4.2	TWO corrections for the HTML table to display correctly (1) Change rowspan to colspan ✓ (2) Add <tr> tags for the third row ✓	2								
10.5.1	A technology that allows a drone to create a map of a running route (1) GPS (2) Drone mapping software (Using photos to create a map), e.g. Photogrammetry ✓ (Any one)	1	4							
10.5.2	TWO benefits of equipping a drone with a camera to follow runners or walkers (1) Livestream events (2) To monitor the safety of the runners or walkers (3) Analyse running and walking techniques (4) To alert emergency services if a runner or walker is injured (5) To ensure that nobody is left behind (6) To track cheating, foul play, etc. (7) Analyse the route (elevations/downhills) ✓✓ (Any two)	2								

10.5.3	<i>Solution to the problem of limited space on a SD card</i> (1) Reduce the resolution/Use a lower image quality (2) Use monochrome settings for pictures (3) Different file formats ✓ (Any one)	1	
10.6	<i>Category of user that wants high-end hardware to edit videos</i> Power user ✓		1
10.7.1	<i>Definition of AR technology</i> Real world images/videos ✓ are overlaid ✓ with computer-generated objects or graphics ✓	3	
10.7.2	<i>ONE example of where AR can be used</i> (1) Overlay to create interactive workouts/meditation/yoga, etc. (2) Virtual coaching and feedback in the gym (3) Overlay to create an interactive fitness group (4) Overlay to gamify exercise routines (5) Overlay used to display heart rate, calories burned, distance covered, etc. (6) Overlay used to provide real-time feedback and analysis during sports training sessions <i>(Note to marker: Accept general AR solutions, e.g. Medical training / Military training / Entertainment / Marketing / Advertising / Engineering design / Consumer design / Robotics / Manufacturing, Maintenance and repairs / Hazard detection, etc.)</i> ✓ (Any one)	1	4
			[25]

TOTAL SECTION C: 50**GRAND TOTAL: 150**