



Province of the
EASTERN CAPE
EDUCATION

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NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2024

COMPUTER APPLICATIONS TECHNOLOGY P2 MARKING GUIDELINES

MARKS: 150

These marking guidelines consists of 18 pages.

SUGGESTIONS AND RECOMMENDATIONS TO MARKERS

- Revisit the questions and the marking guideline 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 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 states '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	D	✓	1
1.2	D	✓	1
1.3	C	✓	1
1.4	C	✓	1
1.5	A	✓	1
1.6	B	✓	1
1.7	C	✓	1
1.8	A	✓	1
1.9	B	✓	1
1.10	A	✓	1
Total: [10]			

QUESTION 2: MATCHING ITEMS

2.1	K	✓	track changes	1
2.2	A	✓	template	1
2.3	N	✓	firewall	1
2.4	S	✓	scheduler	1
2.5	E	✓	operating system	1
2.6	R	✓	UPS	1
2.7	P	✓	Icons	1
2.8	G	✓	GIGO	1
2.9	I	✓	convergence	1
2.10	F	✓	phishing	1
Total: [10]				

QUESTION 3: TRUE/FALSE ITEMS

(Note to marker:

- In Question 3.1, 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	False – beta ✓	1
3.2	True ✓	1
3.3	False – cloud computing ✓	1
3.4	True ✓	1
3.5	False – mid ✓	1
Total: [5]		

TOTAL SECTION A: 25

SECTION B

QUESTION 4: SYSTEM TECHNOLOGIES

4.1.1	ONE motivation why the committee should buy wireless devices <ul style="list-style-type: none"> Prevents clutter on the desk or work surface as there are no cables You have a wider range of movement (mobility) ✓ (Any ONE)	1	
4.1.2	TWO troubleshooting steps to get a wireless (Bluetooth) keyboard to work again <ul style="list-style-type: none"> Check/replace the batteries in the keyboard Check connections/Shut down and reboot the computer Try another keyboard to see whether is not the keyboard itself ✓✓ (Any TWO)	2	3
4.2.1	Type of printer suitable for high volumes of printing Laser printer ✓	1	
4.2.2	Function of a 3D printer AND how it works 3D printers can create three-dimensional (3D) solid objects from a digital model of the item. ✓ by adding successive layers of material on top of one another ✓ (3D printing is also known as additive manufacturing (AM))	2	
4.2.3	TWO advantages of buying a scanner to use in the new ICT centre <ul style="list-style-type: none"> Older documents can be scanned and archived. Large documents that consist of many pages can be scanned and collated into a single digital file Making it easy to convert documents into a digital format for storage Scanning documents that contain text as an image and then using OCR software to convert the image into an editable document Making it easy to convert old film photos into digital format, as well as preserving older documents for generations to come Being able to store documents digitally also means that less paper and ink are used and it does not take up office space as paper files do Scanned copies can be e-mailed directly instead of having to be faxed or posted ✓✓ (Any TWO)	2	5

4.3.1	<i>TWO possible advantages of updating operating system</i> <ul style="list-style-type: none"> • Better security/'Bugs' will be fixed/Errors are fixed • Modifications to device drivers are made • Access to new expanded functions is given • Allow new functionality to some programs • Solves problems that occurred in the program, etc. ✓✓ (Any TWO)	2	
4.3.2	<i>TWO software related problems that could reduce the processing speed of a computer</i> <ul style="list-style-type: none"> • Too many background programs / Too many programs open at the same time • Computer may be infected by malware/virus • Software updates being automatically downloaded • Defective application ✓✓ (Any TWO)	2	4
4.4.1	<i>ONE hardware device to assist the visually impaired (blind) learners</i> <ul style="list-style-type: none"> • Braille keyboards/braille 'display' • Magnification devices • Large-key keyboards • Braille printers ✓ (Any ONE)	1	
4.4.2	<i>How speech recognition program assists physically challenged learners</i> <ul style="list-style-type: none"> • Learners who cannot use their hand(s) properly can use the speech recognition program to convert speech to text • Visually impaired learners can use speech recognition program to give commands/instructions to the computer • Visually impaired learners can use speech recognition program to convert speech to text ✓ (Any ONE)	1	2
4.5	<i>Difference between site license and creative commons license</i> Site license allows a company or school to install software an unlimited number of times within the company or school ✓ Creative commons license is a copyright agreement that allows any person to use and share content under certain conditions from the owner of the copyright ✓	2	2

4.6.1	Unit to measure the resolution of images Megapixel (MP)/pixels per inch ✓	1	3
4.6.2	Where dpi is used as a specification <ul style="list-style-type: none"> • Printer • Monitor ✓ (Any ONE)	1	
4.6.3	Effect of low resolution on digital image <ul style="list-style-type: none"> • Pixellated/Unclear/Fuzzy/Not sharp/Poorly defined • Smaller storage size, etc. ✓ (Any ONE)	1	
4.7.1	Screenshot: State of the hard drive It is not full/there is a lot of free space/very little is stored on the hard drive ✓	1	6
4.7.2	Storage space available affected by disk defragmentation <ul style="list-style-type: none"> • There will be no significant difference in free space on the disk ✓ • Defragmenting reorganises/rearranges files ✓ 	2	
4.7.3	THREE tips to keep computer in good running order <ul style="list-style-type: none"> • Run Scan Disk • Run regular anti-virus updates • Make backups of data • Delete unnecessary files • Download software updates/'patches' regularly • Update security software • Physical cleaning/wiping keyboard/protect against dust • Update drivers, etc. ✓✓✓ (Any THREE)	3	
			[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1.1	Explain LAN games Playing computer games on a network ✓	1							
5.1.2	Difference between online gaming and LAN gaming <table border="1"><tr><td>Online gaming involves playing against people around the world ✓</td><td>LAN gaming involves playing with people in the same physical location ✓</td></tr><tr><td colspan="2">OR</td></tr><tr><td>Online gaming involves playing through the internet ✓</td><td>LAN gaming involves playing while connected to a local network ✓</td></tr></table> (Note to marker: Accept any one of the above differences for two marks)	Online gaming involves playing against people around the world ✓	LAN gaming involves playing with people in the same physical location ✓	OR		Online gaming involves playing through the internet ✓	LAN gaming involves playing while connected to a local network ✓	2	3
Online gaming involves playing against people around the world ✓	LAN gaming involves playing with people in the same physical location ✓								
OR									
Online gaming involves playing through the internet ✓	LAN gaming involves playing while connected to a local network ✓								
5.2.1	Type of software to read pages from the Internet – NOT brand names Web browser ✓	1							
5.2.2	THREE issues when deciding on an ISP <ul style="list-style-type: none">• What the costs are• What the cap is on the amount of data that can be downloaded• Shaped or unshaped connection• Bandwidth/speed of connection or line (download and upload speed)• Whether it controls standard viruses• Whether it hosts websites for clients• What the different types of connections to the ISP are (wired, wireless, fibre)• What type/hours of support can be expected• Network coverage and availability, for example 3G, etc.• Reputation and reliability ✓✓✓ (Any THREE)	3							
5.2.3	TWO advantages of broadband connection, other than cost <ul style="list-style-type: none">• High speed/Faster download• Permanent connection• One can watch video clips/movies and listen to music over the Internet• Can use telephone and surf Internet at same time if using a fixed line, etc. ✓✓ (Any TWO)	2	6						
5.3	Meaning of live streaming <ul style="list-style-type: none">• Do not have to complete a download before viewing the video/listening to the audio• Watch a video live/on the internet• Can listen to music in real time, etc. ✓ (Any ONE)	1	1						
5.4	Purpose of the digital certificate To indicate that the website is legitimate ✓	1	1						

5.5	<i>TWO reasons why e-commerce and other web applications use cookies</i> E-commerce – to identify users ✓ (data such as user names are available) Web applications – to record and store user preferences ✓ (registers viewing preferences)	2	2
5.6	<i>How can pop-up window be prevented?</i> Use a filtering program such as a pop-up blocker ✓	1	1
5.7	<i>General term to outline rules in which community centre may be used</i> AUP – Acceptable Usage Policy ✓	1	1
			[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1.1	URL shortening service function URL shortening service converts a long URL to a shorter version ✓	1	3
6.1.2	Benefits of a URL shortening service This shorter version of the URL will take a user to the same web address, ✓ but is easier to remember and/or type out ✓	2	
6.2	TWO criteria when evaluating information in a website <ul style="list-style-type: none"> • Accuracy • Affiliation • Authority • Accessibility • Objectivity • Coverage • Currency • Usability ✓✓ (Any TWO)	2	2
6.3	TWO features of a spreadsheet to make it suitable for data analysis <ul style="list-style-type: none"> • Graphs • Range of Functions / Formulae • Sorting • Pivot tables • Conditional formatting • Filtering • Validation features ✓✓ (Any TWO)	2	2
6.4	Reason for bibliography at the end of report <ul style="list-style-type: none"> • To prevent plagiarism • One must acknowledge sources • For future reference ✓ (Any ONE)	1	1
6.5	Difference between a citation and a caption Citation – Reference information of a source ✓ Caption – Numbered label you apply to objects, images, equations, etc. ✓	2	2
			[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1.1	<p>TWO skills required by people who wish to follow a career in big data analysis</p> <ul style="list-style-type: none"> • Analytical skills: Analytical problem-solving abilities to determine which data is relevant to a particular solution. • Creativity: Ability to create new methods to gather, interpret, and analyse a data strategy. • Mathematics and statistical skills • Computer science: Programmers need to come up with algorithms/systems/steps to process data into insights. • Business skills: Understand what drives the growth of a business as well as its profit. <p style="text-align: right;">✓✓ (Any TWO)</p>	2	
7.1.2	<p>Explain the term crowd funding.</p> <p>A process where a single idea or business practice is funded by multiple small donations ✓ from volunteer contributors usually before the business adventure is started ✓</p>	2	4
7.2	<p>Purpose of the EULA agreement</p> <ul style="list-style-type: none"> • Document is a legal contract between user and software company ✓ that describes what you may or may not do with the software ✓ • This document is an end-user license agreement that states on how many computers ✓ you can load the software ✓ • What the program can be used for, ✓ liabilities of user and distributor in case of damage caused by the program ✓ <p>(Note to marker: Accept any ONE for two marks)</p>	2	2
7.3	<p>Explain geotagging</p> <p>A process where a geographical position where a photograph was taken ✓ is added to the metadata of a file ✓</p> <p>(Note to marker: Also accept: Reference to latitude and longitude.)</p>	2	2

7.4	<p>Example of Internet of Things (IoT) in a smart home</p> <p>Any suitable example ✓✓</p> <p>Example 1: The alarm clock and the kettle are both connected to an app over the internet. When the alarm goes off, the kettle is switched on.</p> <p>Example 2: The app that manages the swimming pool is connected to a sensor in the pool as well as to other devices such as the pool pump. The sensor communicates the need for chemicals. The app then switches on the pump.</p> <p><i>(Note to marker: Also accept:</i></p> <ul style="list-style-type: none"> • Different IoT enabled devices that are connected • Communication/control between the devices) 	2	2
		[10]	

QUESTION 8: SOLUTION DEVELOPMENT

8.1	Purpose of an Accessibility Checker A user would use the Accessibility Checker to check for content that people with disabilities ✓ may find difficult to read ✓	2	2
8.2.1	Primary key AND state why Barcode ✓ Motivation: Only one book can have the barcode number / unique ✓	2	6
8.2.2	Data type for the Fiction field Yes/No ✓	1	
8.2.3	Data type for No_of_Copies field Number ✓	1	
8.2.4	Feature of a database report to separate the fiction from the non-fiction books Grouping ✓	1	
8.2.5	Feature of a word processing program to generate letters Mail merge ✓	1	
8.3	Feature of a spreadsheet to copy a function down to cells below Autofill ✓	1	1
8.4.1	Cause of the error found in cell C5 <u>AND</u> explain how to correct this error The cell is too narrow ✓ Adjust the width of the column ✓	2	4
8.4.2	Correct the function OR explain why the function does not work =VLOOKUP(F2;\$B\$1:\$C\$5;2;FALSE)*G2 OR The <i>table array</i> range must be \$B\$1:\$C\$5 ✓ The lookup column is 2 and not 3 ✓	2	

8.5	<p><i>TWO possible reasons for hyperlinks not working</i></p> <ul style="list-style-type: none"> • Tag has spelling errors/syntax errors/no closing tag • Reference resource or file being referred to does not exist anymore • Hyperlinks of a saved page do not reference online resource/page/document anymore • No internet access <p style="text-align: right;">✓✓ (Any TWO)</p> <p><i>(Note to marker: Allow only one mark per bulleted option.)</i></p>	2	2
			[15]

TOTAL SECTION B: 75

SECTION C

QUESTION 9: INTEGRATED SCENARIO

9.1.1	Computer user Power user ✓	1	
9.1.2	Manufacturer of the graphics processor NVIDIA ✓	1	
9.1.3	How is the size of monitors measured AND name the unit Diagonally ✓ Inches ✓	2	
9.1.4	Definition of a bitcoin Bitcoins (BTC) are a form of virtual money/digital currency ✓ /means of payment Bitcoins can be exchanged for other currencies, products, and services ✓	2	
9.1.5	TWO limitations of cryptocurrencies <ul style="list-style-type: none"> Not widely accepted Bitcoin wallets can be lost Volatility and price fluctuations No buyer protection, no safety net or recourses if something goes wrong Security and hacking risks Transaction speed slow when more users join the network ✓✓ (Any TWO)	2	
9.1.6	THREE advantages of using an SSD <ul style="list-style-type: none"> SSD is faster, has better performance and is very reliable SSD is less likely to get damaged because of no moving parts Durable and run quieter Read/write speed (data access) of SSD is extremely fast SSD uses 'flash memory' to store data and is not affected by magnetic interference SSD has low power consumption (energy-efficient) SSD is easier to carry around because of its physical size (2.5 inch) SSD does not become fragmented therefore there is no need to defrag ✓✓✓ (Any THREE)	3	
9.1.7	Explain the function of a power supply unit (PSU) Power Supply Unit (PSU) checks that the power being supplied to a PC is constant ✓ and is of the correct voltage ✓	2	13

9.2.1	Define artificial intelligence (AI) Artificial intelligence is computer software/systems ✓ that simulates human intelligence / capable of performing complex tasks that only a human could do ✓	2	
9.2.2	ONE advantage of using a chatbot to deal with user enquiries <ul style="list-style-type: none"> Facilitate seamless live communication Make customer service available 24/7 Improve response time Saving on personnel costs Automates tedious time-consuming tasks Get constant improvement over time with machine learning ✓ (Any ONE)	1	
9.2.3	TWO reasons to use a real person <ul style="list-style-type: none"> Can handle a wider variety of questions/answers Provides employment to people Unwillingness of people to use service because they know it is a machine Negative perceptions of AI Machines are not equipped to handle context/emotions ✓✓ (Any TWO)	2	5
9.3.1	Briefly explain pharming <ul style="list-style-type: none"> Pharming is a term used to describe a type of cyber-attack that redirects users to fraudulent websites ✓ or manipulates their computer systems to collect sensitive/personal information such as usernames and passwords ✓ 	2	
9.3.2	Explain e-mail spoofing <u>AND</u> who typically uses spoofing <ul style="list-style-type: none"> Changing of an e-mail header so that the message appears to come from a different source ✓ Distributors of spam/Spammers ✓ 	2	
9.3.3	List THREE social consequences of malware <ul style="list-style-type: none"> Loss of money Loss of personal or business information or data / corrupted files Expenses incurred to fix problems and prevent future cybercrimes Loss of reputation due to personal information that is revealed Long-term debt created resulting in poor credit rating due to online identity theft Cyber-attacks Harassment ✓✓✓ (Any THREE) (Note to marker: Any other acceptable answer)	3	7
			[25]

QUESTION 10

10.1.1	<p><i>TWO limitations or weaknesses of digital communications</i></p> <ul style="list-style-type: none"> Digital communications depend on Internet coverage Their efficiency depends on Internet speed They require other people to be connected digitally They require expensive equipment There are many different standards and both the sender and receiver need to be using the same applications Hardware and software compatibility problems may occur The effective use of digital communications depends on the skill and confidence of the user Data can be lost when phones/tables etc. are lost, stolen or broken Hackers, crackers, fraudsters and other cyber criminals can misuse digital communication <p style="text-align: right;">✓✓ (Any TWO)</p> <p><i>(Note to marker: Accept any other limitations or weaknesses)</i></p>	2	
10.1.2	<p><i>TWO good practices when using digital communications</i></p> <ul style="list-style-type: none"> Keep time differences in mind Keep differences in bandwidth in mind Remember that digital communications are largely impersonal and faceless, communication can be misinterpreted Remember that you cannot undo something you have said or typed The Internet is a very public place, be aware of posting personal details online <p style="text-align: right;">✓✓ (Any TWO)</p>	2	4
10.2	<p><i>Differentiate between e-learning and m-learning</i></p> <p>E-learning takes place through laptops and desktops via the internet ✓ while m-learning takes place through mobile devices like smartphones and tablets ✓</p>	2	2
10.3.1	<p><i>Explain the term ergonomics</i></p> <p>Study of the designing and arranging of components or equipment ✓ for most efficiently and safely optimal utilization by humans ✓</p>	2	
10.3.2	<p><i>Why buy ergonomically designed keyboard and mouse?</i></p> <p>They reduce the impact of RSI ✓</p>	1	3

10.4	<p>Explain augmented reality (AR) by giving a learning example</p> <ul style="list-style-type: none"> • Learning geometry/shapes • Augmented reality children's books • Augmented reality newspapers where users can see images as videos • Human and physical geography • Sightseeing • Museum guidance • Building plans • Military to give soldiers better spatial awareness • Virtually see the furniture in your homes before making a purchasing decision <p style="text-align: right;">✓ (Any ONE)</p> <p>(Note to marker: Accept any valid/reasonable response.)</p>	1	1
10.5.1	<p>Explain information overload</p> <p>Information overload is what happens when people cannot cope ✓ with the amount of information they are exposed to every day ✓</p>	2	
10.5.2	<p>THREE strategies to prevent becoming a victim of information overload, <u>besides reading more quickly and accurately</u></p> <ul style="list-style-type: none"> • Learn to analyse and compare sources ✓ • Take a disciplined and structured approach to deal with information e.g. filter your e-mails, use RSS feeds to structure news, etc. ✓ • Do not add to the problem by unnecessarily forwarding information to others ✓ 	3	5
10.6	<p>Difference between drivers and firmware</p> <p>Drivers are software programs that enables the operating system to communicate with and control hardware devices ✓</p> <p>Firmware is a set of instructions programmed directly into a hardware device and enables the device to perform functions ✓</p>	2	2
10.7.1	<p>Why is the use of the Enter key not good choice to move headings to next page?</p> <ul style="list-style-type: none"> • The Enter key should only be used at the end of a paragraph otherwise you will create unnecessary hard spaces • You will create empty paragraphs if you use the Enter key to move headings to a next page • Does not contribute to good page layout <p style="text-align: right;">✓ (Any ONE)</p>	1	
10.7.2	<p>Propose a way to do this correctly</p> <p>Make use of a Page break ✓</p>	1	2

10.8.1	Meaning of error message: #VALUE! and solution Reference is made to cells in the formula/function where the data type cannot be used in a calculation – text is multiplied by a number. ✓ SOLUTION: Ensure that all cell references and any other values used in the calculation are of a data type that can be used in calculations. ✓	2	
10.8.2	Meaning of error message: #DIV/0! And solution Division by zero or an empty cell is attempted ✓ SOLUTION: Change the divisor to another number, or key in a number if the cell is empty ✓	2	4
10.9	When to use absolute cell referencing When you want to prevent a column letter and/or row number in a formula or function from changing ✓ when the formula or function is copied to another cell. ✓	2	2
			[25]
TOTAL SECTION C:			50
GRAND TOTAL:			150