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NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2025

COMPUTER APPLICATIONS TECHNOLOGY P2 MARKING GUIDELINE

MARKS: 150

This marking guideline consists of 16 pages.



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SUGGESTIONS AND RECOMMENDATIONS TO MARKERS

Revisit the questions and the marking guideline frequently during the marking session.

It is advisable to 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	B ✓	1
1.2	A ✓	1
1.3	D ✓	1
1.4	B ✓	1
1.5	C ✓	1
1.6	B ✓	1
1.7	C ✓	1
1.8	A ✓	1
1.9	D ✓	1
1.10	C ✓	1
TOTAL: [10]		

QUESTION 2: MATCHING ITEMS

2.1	J ✓ Trojan	1
2.2	Q ✓ Colour Depth	1
2.3	H ✓ Proxy	1
2.4	A ✓ NIC	1
2.5	C ✓ CAPTCHA	1
2.6	N ✓ OCR	1
2.7	D ✓ Upgrading	1
2.8	G ✓ Template	1
2.9	M ✓ Lumen	1
2.10	R ✓ NOW	1
TOTAL: [10]		

QUESTION 3: TRUE/FALSE ITEMS

<i>(Note to marker:</i>		
• <i>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</i>		
• <i><u>Award the mark if the correct answer is given without the word FALSE</u></i>		
• <i>Do NOT award the mark if only the word FALSE is given without the correct answer)</i>		
3.1	False, AUP (Acceptable Use Policy) ✓	1
3.2	True ✓	1
3.3	False, HDMI ✓	1
3.4	True ✓	1
3.5	False, Beta ✓	1
TOTAL: [5]		

TOTAL SECTION A: 25

SECTION B

QUESTION 4: SYSTEM TECHNOLOGIES

4.1.1	<p>ONE advantage: OSS is free to use. OSS can be modified. ✓</p> <p style="text-align: right;">(Any one)</p> <p>ONE disadvantage: Limited support available. Many different versions of software available. You can never be sure of the quality, or that it will work properly. Open-source software can usually only be obtained from the internet. Open-source software is not widely used. It can be difficult to access documentation and supporting materials for it. ✓</p> <p style="text-align: right;">(Any one)</p>	2	
4.1.2	<p>Android type of software Operating system ✓</p>	1	
4.1.3	<p>TWO functions of operating system Manages hardware and software Provides a user interface Manages basic security ✓ ✓</p> <p style="text-align: right;">(Any two)</p>	2	
4.1.4	<p>Android device Smartphone ✓</p>	1	6
4.2.1	<p>Definition of Driver A driver is software ✓ (a program) that allows the operating system to communicate with hardware devices. ✓</p>	2	
4.2.2	<p>Answer to plug-and-play device: No ✓ Reason: The user was asked to install a driver ✓, whereas plug-and-play refers to a device being configured automatically by the operating system when connected to the computer ✓, without the user having to install software.</p>	3	
4.2.3	<p>ONE function Scanning (Photo)copying Faxing Email ✓</p> <p style="text-align: right;">(Any one)</p>	1	
4.2.4	<p>Multi-function printer example of convergence A multi-function printer combines multiple functions from different devices into one device. ✓</p>	1	7
4.3.1	<p>Speed up the computer Utility: Disk Defragmenter ✓ Explanation: It reorganises data to improve access speed. ✓</p>	2	

4.3.2	Free space on the hard drive Utility: Disk Cleanup ✓ Explanation: Removes temporary and unnecessary files to free up space ✓	2	4
4.4.1	Definition of Ergonomics Ergonomics is the study and design of equipment ✓ in the workplace in order to promote the safety and comfort of the user. ✓	2	
4.4.2	ONE feature of ergonomic keyboard Wrist pad Split-key layout Curved layout Low-profile keys Thumbkeys ✓ (Any one)	1	
4.4.3	ONE advantage of wired keyboard Provides a more stable connection/no electrical interference. Will have constant power/does not require batteries. ✓ (Any one)	1	
4.4.4	TWO troubleshooting methods for wired keyboard not responding Check that cable is properly connected Try another USB port Check device manager for driver errors Update or reinstall keyboard drivers Restart the computer ✓✓ (Any two)	2	
4.4.5	Gamer type of user Power User ✓	1	7
4.5	Input device on a laptop, not typical in desktop Touchpad/Trackpad Integrated/built in webcam Integrated/built-in microphone ✓ (Any one)	1	1
			[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1	Difference between router and switch in a network Router: A router connects different networks together, such as connecting a home network to the internet. ✓ Switch: A switch connects devices together within the same network via a cable ✓	2	2
5.2.1	TWO advantages of Fibre More reliable connection (less affected by electrical interference/EMI) Supports higher bandwidths for multiple users/devices. Can span longer distances from exchange without losing signal strength Immune to eavesdropping Less likely to degrade over time compared to copper lines. Less likely to be stolen due to no copper content ✓ ✓ (Any two)	2	
5.2.2	Missing unit for speed Mbps (Megabits per second) ✓	1	
5.2.3	Definition of unthrottled Unthrottled means the internet speed is not intentionally slowed down ✓ by the service provider after a certain amount of data has been used/ when lines get busy ✓	2	
5.2.4	Name for Axxess company ISP ✓ (Internet Service Provider) ONE other service Email hosting Web hosting VoIP Cloud storage or backup services VPN Fax to email Spam filtering ✓ (Any one)	2	7
5.3	TWO advantages of e-commerce for the seller Lower operational costs (no need for physical store). Wider customer reach (can sell nationally/internationally). Open 24/7 – can make sales any time. Easier to track customer behavior and trends Easier to update product information and promotions. Sellers can reach customers nationally or globally, not just in their local area. Inventory and sales can be tracked automatically using e-commerce platforms. (Any other valid advantage) ✓ ✓ (Any two)	2	2

5.4	TWO security measures used by banks PINs and passwords for logging in Two-factor authentication (2FA) One-time PINs (OTPs) Biometric verification (fingerprint or facial recognition) SMS/email alerts for transactions <i>(Any other valid advantage)</i> ✓ ✓ (Any two)	2	2
5.5	Grid computing and botnets Grid computing is legal and voluntary; users give permission to share their computing resources for legitimate purposes like scientific research. ✓ Botnets are often illegal and involve malware infecting computers without user knowledge or consent, used for malicious purposes like spamming or DDoS attacks. ✓	2	2
			[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1.1	<p>ONE advantage Easy to distribute to a wide audience Saves time and cost Responses are automatically collected and stored digitally Not limited to a specific area – respondents can complete from anywhere in the world Contributes to green computing – saves paper (Any other valid advantage) ✓ (Any one)</p> <p>ONE disadvantage Excludes people without internet access Responses may be dishonest or inaccurate Limited to users with basic digital skills Risk of low response rates as people can easily ignore link ✓ (Any one)</p>	2	
6.1.2	<p>TWO reasons for using a Spreadsheet Allows easy organization with sorting, and filtering of data Formulas and functions can be used for statistical analysis Supports data visualisation with graphs and charts Can handle large volumes of structured data Quick analysis such as conditional formatting ✓ ✓ (Any two)</p>	2	
6.1.3	<p>Need for questionnaire The information needed might be specific to a group of people or context Existing data may be outdated or irrelevant to the current research To gather opinions, attitudes, or preferences that are not published online ✓ (Any one)</p>	1	
6.1.4	<p>Benefit of shortening URL Easier to share or remember Looks cleaner and more professional Takes up less space in messages or posts May increase the likelihood of users clicking the link ✓ (Any one)</p>	1	6
6.2	<p>ONE example of information on cover page Author's name Date of submission Institution/school name Subject name Teacher's name Subtitle Abstract ✓ (Any one)</p>	1	1
6.3	<p>Purpose of a citation To give credit to the original source of information or ideas To avoid plagiarism To allow readers to locate the source for verification or further reading ✓ (Any one)</p>	1	1

6.4	TWO other criteria other than accuracy Authority – Who is the author or publisher? Are they reputable? Currency – Is the information up to date? Objectivity – Is the content biased or neutral? Relevance/Coverage – Is the information appropriate for the research purpose? ✓ ✓ <div style="text-align: right;">(Any two)</div>	2	2
			[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1.1	Malware name Ransomware ✓	1	
7.1.2	Define Encryption Encryption is when the data is locked or scrambled so that it can only be accessed with a decryption key/passcode/password ✓	1	
7.1.3	Bitcoin payment preference Bitcoin transactions are untraceable Bitcoin transactions do not form part of the normal banking system There is no central authority that enables the identity of the receiver to be known ✓ (Any one)	1	3
7.2.1	Example of saving paper for the school Teachers can distribute digital notes, assignments, or tests instead of printing. Learners can submit assignments via email or LMS (e.g., Google Classroom/MS Teams). School can send out emails to parents instead of physical letters Application forms can be completed through an online form instead of printed manually (Any other valid answer, but must be about how computers can be used to save on paper.) ✓ (Any one)	1	
7.2.2	Example of saving time Teachers can use marking software or auto-marked online quizzes. Timetables, announcements, and results can be shared instantly via school platforms. Students can research quickly using the internet instead of books. (Any other valid answer, but must be about how computers can be used to save on paper.) ✓ (Any one)	1	2
7.3	Purpose of firewall The firewall acts as a barrier between the computer and the internet, preventing unauthorised access. ✓ OR A firewall is used to monitor and control incoming and outgoing network traffic based on security rules.	1	1
7.4	Spoofing used in phishing email Spoofing is when the sender's email address or display name looks like it is from a trusted source, such as a bank or school. ✓ This increases the chance that the victim will believe the email is legitimate and follow instructions, such as clicking on a malicious link or providing sensitive information. ✓	2	2

7.5	<p>TWO good practices to ensure physical health</p> <p>Maintain good posture while sitting. Use a comfortable, adjustable chair Position the monitor at eye level. Take regular breaks to avoid eye strain and repetitive strain injuries Use ergonomic equipment (e.g., mouse, keyboard). Ensure adequate lighting to reduce glare on the screen. ✓ ✓ (Any two)</p>	2	2
			[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1	No headings in table of contents The user must apply the built-in heading styles (e.g., Heading 1, Heading 2) to the headings in the document. ✓	1	1
8.2	Where in document will text appear on every page In the header or footer ✓ <i>(also accept Watermark)</i>	1	1
8.3	Accessibility checker: Category of disabled user Visually impaired / blind ✓	1	1
8.4.1	Validation rule >0 and ✓ <=5 <i>(Also accept between 1 and 5)</i>	1	4
8.4.2	TWO reasons for HoursPerDay causing errors HoursPerDay has been set as a primary key, which won't work as it is not a unique field to each record. ✓ HoursPerDay has been set as Short Text data type, which it should be set as a Number. ✓	2	
8.4.3	Output of Query IS NULL The query will display the volunteers where the Donation field is empty/ where no donation amount has been recorded. ✓	1	
8.5.1	Cell G10 The cell needs to be set to Number format ✓	1	
8.5.2	I6: Total amount The total days needs to be multiplied by the number of people ✓ and then multiplied by the room rate ✓ <i>(Also accept when making reference to actual cell addresses in answer.)</i>	2	6
8.5.3	I6:I10 Cell H3 has not been absolved ✓ <i>(Also accept if stated that cell H3 has not been given a name)</i>	1	
8.5.4	Extract initial LEFT function ✓	1	
8.5.5	Result of =LEN(A10) 4 ✓	1	
8.6	 differ from is used for normal bullets ✓ whereas is used for a numbered list. ✓	2	2
			[15]

TOTAL SECTION B: 75

SECTION C

QUESTION 9: INTEGRATED SCENARIO

9.1.1	Manufacturer for processor Intel ✓	1	
9.1.2	TWO advantages of SSD other than faster data transfer More durable as there are no moving parts, so less likely to be damaged Quieter operation as there is no spinning disk. More energy-efficient/uses less power than traditional hard drives. Data/Files on SSDs do not get fragmented like traditional hard drives Physically smaller in size, thus takes up less space inside the computer system ✓ ✓ (Any two)	2	
9.1.3	Amount of memory 32 GB ✓ Impact of more memory More memory allows the computer to run more programs at the same time and improves performance ✓	2	
9.1.4	Purpose of cache memory Cache memory stores frequently used data and instructions so the CPU can access them more quickly than from memory (RAM). ✓	1	
9.1.5	Component that come with cache memory CPU ✓	1	
9.1.6	Difference between size and resolution Size refers to the physical diagonal measurement of the screen. ✓ From the ad: 27" (inches) ✓ Resolution refers to the number of pixels displayed on the screen/the quality of the screen display. ✓ From the ad: 1920 x 1080 ✓	4	
			11

9.2.1	How a 3D printer works A 3D printer creates three-dimensional objects by adding material layer by layer ✓, following a digital model (CAD file) created on a computer. ✓	2	
9.2.2	TWO Limitations of using 3D printer Printing can be time-consuming, especially for complex designs. Not suitable for mass production. Limited material types – most use specific plastics. Requires technical skills to design or troubleshoot. Final products may lack strength or durability compared to manufactured parts. Model size is limited to the printer size ✓ ✓ (Any two)	2	4
9.3.1	Definition of web-based application A web-based application is software that runs from an internet server ✓ and accessed through a web browser ✓, without needing to be installed on a user's device.	2	
9.3.2	TWO advantages of web-based applications It can be accessed from any device with internet No need for installation / Saves on local storage space Software is always up to date Can run programs that require higher system requirements ✓ ✓ (Any two)	2	4
9.4.1	Difference between Virtual Reality and Augmented Reality Virtual Reality (VR) creates a complete digital environment that replaces the real world. ✓ Augmented Reality (AR) overlays digital elements (images, information) onto the real-world view, enhancing what the user sees. ✓	2	
9.4.2	ONE limitation of Virtual Reality It can cause motion sickness or eye strain for some users. May lead to isolation or disorientation with extended use. Limited physical space required to safely use VR without bumping into objects. Psychological, moral and ethical concerns, especially for children who may not be able to distinguish between what is real and virtual. ✓ (Any one)	1	3
9.5	TWO methods of securing laptops Use cable locks to physically attach devices to desks. Store devices in locked cabinets or rooms when not in use. Install motion sensors Install tracking software (e.g., Find My Device). Use surveillance cameras or alarms. ✓ ✓ (Any two)	2	2
9.6	Utility software Task manager ✓	1	1
			[25]



QUESTION 10

10.1.1	Explanation of a drone and how it works A drone is a remotely controlled or autonomous ✓ flying device ✓ equipped with sensors or cameras.	2	
10.1.2	TWO limitations of drones Limited battery life – may require frequent charging or replacement. Weather dependent – performance may be affected by rain, wind, or fog. Signal interference or loss of connection can lead to crashes. Privacy and legal restrictions may limit flying areas. ✓ ✓ (Any two)	2	
10.1.3	Definition of Artificial Intelligence Artificial Intelligence (AI) is the simulation of human intelligence by machines ✓, allowing them to perform tasks such as learning, decision-making, and problem-solving. ✓	2	
10.1.4	TWO advantages of Artificial Intelligence Can process large amounts of data quickly and accurately. Reduces human error. Can work continuously without fatigue. Automates repetitive tasks, saving time and cost. ✓ ✓ (Any two)	2	8
10.2.1	Definition of Sync Sync (short for synchronize) means automatically updating files between devices or between local storage and the cloud ✓ so that the latest version is available from any device. ✓	2	
10.2.2	TWO disadvantages of online storage Requires an internet connection to access Not in control of backup or security Limited free space available – would need to pay for more storage space Data can accidentally be overwritten or deleted if shared with others If the company goes bankrupt, you could lose all your data You pay for the bandwidth used for uploading and downloading data. ✓ ✓ (Any two)	2	
10.2.3	Example of online storage platform Google Drive, Dropbox, OneDrive, iCloud, Mega, etc. ✓	1	5
10.3.1	Storage medium for backing up videos and photos External hard drive ✓	1	
10.3.2	Reason for backups stored off-site To protect data in case of theft, fire, or disaster. ✓	1	
10.3.3	TWO reasons for specialised backup software Backups can be scheduled Backups can be made of only new or changed data Backups can be encrypted Backups can be automatically compressed Backups can automatically be uploaded to online storage ✓ ✓ (Any two)	2	4

10.4.1	TWO good practices for Video conferencing Ensure a stable internet connection. Test video and microphone before call Use a quiet, well-lit environment. Mute microphone when not speaking. Dress professionally and be on time. Position the camera at eye level. ✓ ✓ (Any two)	2	
10.4.2	Protocol VoIP (Voice over Internet Protocol) ✓	1	3
10.5.1	Type of input Biometric ✓	1	
10.5.2	Fingerprint more secure than password Biological features are unique to each individual ✓ and cannot be guessed or copied like a password. ✓	2	3
10.6	Word processing feature for letters Mail merge ✓	1	1
10.7	Suitable chart type Line Chart ✓	1	1
			[25]
		TOTAL SECTION C:	50
		GRAND TOTAL:	150