basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/
NATIONAL SENIOR CERTIFICATE EXAMINATIONS

COMPUTER APPLICATIONS TECHNOLOGY P2

2019

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 19 pages.

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 (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.

- 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 guideline.
  - Ask yourself or your senior marker if the response could ´fit´ into the marking guideline before allocating the correct marks to the candidate.
  - Accept correct answers that are opposite to the answers in the marking guidelines, e.g. the marking guideline states 'slow' and the learner 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, NAME or STATE: mark the first number of instances required, e.g. the first TWO facts if the candidate presents a list of say FIVE facts and only two facts were required.

- All other answers must be regarded as a single unit.

SECTION A

QUESTION 1: MULTIPLE-CHOICE   **QUESTION 2: MATCHING ITEMS**

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

2.1	K	✔	1
2.2	M	✔	1
2.3	L	✔	1
2.4	J	✔	1
2.5	B	✔	1
2.6	C	✔	1
2.7	D	✔	1
2.8	R	✔	1
2.9	E	✔	1
2.10	G	✔	1
		Total: [10]	

QUESTION 3: MODIFIED TRUE OR FALSE

	(Note to marker: In Question 3.2, 3.4 and 3.5, accept the correct term even if false is not stated. Do NOT award a mark if only 'FALSE' is written down.)	
3.1	TRUE	1
3.2	FALSE, HDMI/DisplayPort	1
3.3	TRUE	1
3.4	FALSE, Blogs	1
3.5	FALSE, Report	1
		[5]

TOTAL SECTION A: [25]

SECTION B

QUESTION 4: SYSTEMS TECHNOLOGIES

4.1	*TWO types of computer users* • Home user • Personal user • SOHO user • Mobile user • Enterprise/Office user ✓✓(Any two)		2
4.2	*Open source operating system (Linux) vs enterprise operating system (Windows)* • FOSS has a less formal support structure • FOSS source code is available/FOSS can be modified • FOSS is generally free of charge • Operating systems have a different approach to the UI ✓✓ (Any two)		2
4.3	*TWO advantages of web applications over installed applications* • The latest/updated version of the software (web application) is used • Web applications run irrespective of the operating system or device provided the browser is compatible • Saves hard drive/storage space • Subscription costs are lower than purchasing the software outright • Available on multiple devices provided internet connectivity is available • May possibly contribute to reducing software piracy as applications are readily available ✓✓(Any two)		2
4.4	*TWO practical examples of where RFID tags are used* • Tracking/identification, i.e. timing of marathon runners, animals, airline luggage, location of soldiers, library books, etc. • Tap and Go/Contactless payments • E-tolls: tracking vehicles moving through toll gates for payment purposes • Stock/inventory control, e.g. supermarkets, DVD store, etc. • Security access control • Preventing theft/misplacing of goods • Gauging pressure and temperature of tyres on a vehicle, etc. ✓✓(Any two)		2

4.5	***TWO reasons for touch screens on portable devices*** • More intuitive to use • Navigation is easier for most users, e.g. swiping/swyping/trace typing • Multi-touch functionality increases variety of operations • Devices can possibly be made smaller • No need for a physical keyboard/Both input and output ✓✓(Any two)		2
4.6	***TWO advantages of a micro USB port over a standard USB port*** • Is standard on most mobile devices, can share chargers/connectors✓ • Takes up less space/Device can be made smaller/thinner✓		2
4.7.1	***TWO reasons for hard drives compared with DVDs for backup (excluding costs)*** • HDD has more capacity • HDDs have faster access speeds • More convenient to save to HDD • DVDs are more likely to be damaged • DVD writers are not standard on newer PCs ✓✓(Any two)	2	
4.7.2	***TWO ways to free up space on an external hard drive*** • Delete unwanted file/Run the Disk Cleanup utility/Clear Recycle bin • Compress data • Reduce resolution of image/multimedia files ✓✓(Any two)	2	
4.7.3	***TWO reasons for external HDD becoming corrupted when making a backup*** • Virus infection • Power failure during data transfer • Faulty USB port/Faulty cable • Corrupted driver • Drive failure during the backup process • Vibration/jolting during backup process, if device is moved • HDD removed during the process ✓✓(Any two)	2	6

4.8	**TWO reasons why there is no display on a screen** • Faulty power • Faulty cable • Cable not connected/Screen not switched on • Faulty graphics card/motherboard/port/computer • Driver problems • Issues resulting from using multiple display devices ✓✓(Any two)		2
4.9	**TWO reasons why software fails to install** • (Software/Installation media) not compatible with operating system/device • Corrupt/Incomplete installation file • Computer does not meet the minimum system requirements, e.g. RAM, CPU, Hard drive, etc. • Need to uninstall old/existing version first • No internet access that the installation may require • User account does not allow software installations/Administrator rights required • Does not have a valid licence key/Does not agree to terms of use ✓✓(Any two)		2
4.10	**ONE limitation of a 3D printer** • Model size is limited to the printer size • Can only print in one material at a time • Not suitable for mass production/It takes long to print objects • Not all objects can be created/printed • Complete re-print is required if any errors occur ✓ (Any one)		1
4.11	**TWO reasons for text being cut off at the edge of a printout** • Printer is not capable of printing close to the edge/Does not have borderless capabilities • Printer properties and the page set up of the document do not correspond/Printer margin settings override the document margins • Printer cannot cater for the specified page size • Paper gets misaligned as it passes through the printer ✓✓ (Any two)		2
			[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1.1	***Device used to connect computers to a network*** • Switch/Hub/Router/Access point✓ *(Note to marker: Accept references to an access point, e.g. Hotspot, etc.)*	1	
5.1.2	***Computer component to connect to a network*** • NIC/Wi-Fi adaptor/Ethernet/Network adaptor ✓	1	
5.1.3	***TWO limitations of wired LAN over WLAN*** • Adding infrastructure is difficult/Specialist knowledge may be required • Available space/specific venue may make it difficult/inappropriate to lay cables/Possible cable clutter • Reduced mobility/portability of devices • Not generally suited for connecting IoT devices ✓✓(Any two)	2	4
5.2.1	***Definition of grid computing*** • Grid computing combines the resources of many servers and/or personal computers on a network✓, such as the internet • To act as one large computer/To satisfy the demand for large processing capacity/To solve a single problem ✓	2	
5.2.2	***Real-life application of grid computing*** *Tasks that require large processing power, such as:* • Weather forecasting • Space exploration/experiments • Bitcoin/Data mining • Analysis of Big Data • Earthquake simulations, etc. ✓(Any one)	1	3
5.3	***TWO measures to block unwanted content from a web browser*** • Enable a pop-up/ad blocker • Use the block website feature of the browser • Request the ISP to block certain websites • Install a plug-in that blocks known questionable sites • Use a safe-search feature of the search engine • Use an anti-virus program that has web content screening ✓✓(Any two)		2

5.4	**_Benefit of shaping for clients_** • Important/High priority internet services✓, e.g. E-mail • will always have preference✓ *(Note to marker: Accept any valid example and explanation.)*		2
5.5.1	**_Concept of streaming_** • Playing/Watching a media file ✓ • as data is being received/without having to download fully ✓	2	
5.5.2	**_TWO ways to prevent/reduce buffering of a video stream_** • Reduce video resolution • Ensure that no other apps/devices are using the bandwidth • Ensure that you have a reasonable line speed/adequate signal strength ✓✓(Any two)	2	4
			[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1	***TWO non-internet sources of information*** • Printed media: Books/Newspapers/Printed media/Articles/Library • Ask people: Interviews/Survey/Questionnaire • Offline recordings: Video clips/Audio clips/Podcasts • Broadcast media: Radio/Television ✓✓ (Any two)		2
6.2	***TWO reasons to use a drop-down form field and not a text form field*** • To offer the respondent a limited choice of answers • To avoid typing/input errors • Consistent data for processing/export • Generally drop-down field input is faster than typing ✓✓ (Any two)		2
6.3	***TWO reasons why wiki content may not be reliable*** • Content can be contributed by non-expert • Not necessarily moderated by experts • Information may be biased/prejudiced/inaccurate • Information may be outdated/Page may be old ✓✓ (Any two)		2
6.4.1	***THREE problems affecting quality of data imported to DB*** • Missing information • Inconsistent data type/date format used in the columns • Duplication of headings • Meaningless field names • Two sets of data in one field/Inconsistent order of data • Difficult to set a primary key due to missing information/duplicate field names ✓✓✓ (Any three)	3	
6.4.2	***ONE problem with the data for a meaningful graph*** • No suitable numeric data • There are no trends or patterns in the data • Data does not allow for functions/formulas • Data cannot be summarised ✓ (Any one)	1	4
			[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1.1	*ONE ergonomically designed device that prevents CTS* • Mouse pad with a wrist rest • Keyboard with a wrist rest • Split keyboard • Track ball mouse/Vertical mouse ✓(Any one)	1	
7.1.2	*TWO reasons for employers to implement ergonomic policy* • Time: Production *time* will not be lost because of employee sick leave/work related injuries • Productivity: Workforce will be more *productive* due to the use of ergonomically designed equipment • Profitability: Possibility of the company being more *profitable* resulting from higher productivity ✓✓(Any two)	2	3
7.2	*TWO measures to prevent PC theft (NOT gates/burglar bars)* • Alarm system/Armed response • Lock down system units/Cable locks • Video camera surveillance • Controlled access, e.g. security guard, electronic device, supervisor, etc. • Store computers in the strong room during non-school time ✓✓(Any two)		2

7.3.1	***Laws that protect the creators of original content***		
	• Copyright laws✓/Intellectual property rights laws	1	
7.3.2	***EULA (End-user license agreement)***		

	• Licence agreement that specifies the terms of use of software, e.g.
	     o Stipulates the number of computers on which the software may be loaded
	     o Number of copies of the software that can be made for backup purposes
	     o The rights to give or sell the software to another individual, but only if the software is removed from the user's computer first
	     o Stipulates the limitation of the use and the amendment of the code, etc.
	
	 ✓(Any one)
		1	

7.3.3	***TWO reasons for NOT using pirated software***		
	• Creators of software do not receive their royalties/payment/Software authors will lose revenue • It is illegal/You could be charged/fined/imprisoned • Virus issues/Possible malware could lead to cybercrimes • No product support from the publisher • Job losses • Unethical/Immoral ✓✓ (Any two)	2	4
7.4	***ONE reason for Bitcoin transactions being potentially risky***		
	• No consumer protection • Cannot reverse a transaction • Easier to hack Bitcoin wallets, etc. ✓ (Any one)		1
			[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1	***Word processing feature to mark specific places***		1
	Bookmarks ✓		
8.2	***Edit document with no word processor***		1
	Save as text file✓		
	(Note to marker: Accept RTF and HTML)		
8.3	***Reason for inserting section breaks in a Word document***		1
	Section breaks allow for the splitting of a document so that each part can have its own formatting, e.g. page numbering/orientation, headers and footers, columns, etc. ✓		
8.4.1	***Term used to describe an asterisk (*) in a database query***	1	
	Wildcard ✓		
8.4.2	***Purpose of the '*' wildcard in a database query***	2	3
	To do a search ✓ based on a partial match ✓/To return every record that starts with 'Smi…' /When searching for records where only a portion of the searched text is known		
8.5.1	***Spreadsheet function***	1	
	• VLOOKUP • Combination of MATCH and INDEX ✓ (Any one)		
8.5.2	***Absolute reference for copying down a formula***	1	
	Use absolute cell referencing ✓ /Use the $ sign/Press the F4 key		
8.5.3	***Change to a table to work with a VLOOKUP function***	1	3
	• Table must be sorted in ascending order of the CODE field • Ensure that STOCK table includes all codes, e.g. 121 ✓ (Any one)		
8.6	***ONE reason for function/formula displaying in a spreadsheet cell***		1
	• The SHOW FORMULAS option is activated/CTRL + ~(tilde) • The cell is formatted to text • Apostrophe (')/Space inserted before the function ✓ (Any one)		

8.7	**TWO logical problems with COUNTIFS function** • Function searches for Grade 2 instead of Grade 3 ✓ /There is no Grade 2 in the column • Counts any percentage above 70% instead of greater or equal to 80%✓		2

8.8.1	**Correction to HTML code**
	
	 • The closing font tag must be moved to before the closing body tag </body>
	 • 'Font style' should be 'font face'
	
	 ✓ (Any one)
	
	 (Note to marker:
	 • *Accept answers referring to other errors, e.g.*
	    ○ *Extra space in front of 'font style' must be removed*
	    ○ *Remove extra closing bracket after 'Crowd Funding'*
	 • *Accept if HTML code was correctly rewritten)*
		1	

8.8.2	**Correction to HTML code** Insert a closing tag for the heading ✓ before the tag *(Note to marker: Accept if HTML code was correctly rewritten)*	1	
8.8.3	**Web browser display** On the browser tab ✓	1	3
			[15]

TOTAL SECTION B: **[75]**

SECTION C

QUESTION 9: INTEGRATED SCENARIO

9.1.1	***ONE reason why HDD is better than SSD in some cases*** • Generally, HDDs have a longer life span (due to read/write life cycle of SSD) • HDD is cheaper per GB ✔ (Any one)	1	
9.1.2	***TWO reasons why more RAM is required*** • PCs will be more capable of handling demanding applications/To meet minimum system requirements of more apps • Able to open more applications at the same time • Improved overall performance • Could be used for a longer period before needing to upgrade/replace ✔✔ (Any two)	2	
9.1.3	***TWO reasons for user profiles*** • Control access to computers/network resources • Track browsing/application history • Monitor usage of network resources • Store customised user settings ✔✔ (Any two)	2	5
9.2.1	***TWO benefits of inputting data into database forms*** • All data on a form relates to one record/A person views one record at a time/Restrict to work on only one record • Can be customised for user to see only the necessary fields/additional information on fields • Input controls can be customised/Allows for user-friendly layout of fields • Decreases the chances of input errors ✔✔ (Any two)	2	
9.2.2	***Feature of word processor to create individual notices*** Mail merge ✔	1	3

9.3.1	**TWO internet services**		
	• Social media services *(Accept any ONE example: YouTube, WhatsApp, Vlogs, Facebook, etc.)* • Dedicated apps *(Accept any ONE example: Google Classroom, Microsoft Classroom, Blackboard, Moodle, ClassDojo, etc.)* • Website • Cloud storage *(Accept any ONE example: Google Drive, Dropbox, One Drive, etc.)* • Podcasts/Vodcasts • E-mail/mailing lists • Chatrooms/VoIP • File transfer service		
	✓✓ (Any two)	2	
9.3.2	**TWO ways to ensure smartphone battery will not drain quickly**		
	• Close unused apps • Use the smartphone monitoring tool to activate power saving options • Switch off Wi-Fi/Bluetooth connectivity/Location (GPS) when not in use/Enable flight mode • Avoid unnecessary downloads • Reduce screen brightness • Enable a dark mode for all apps and UI • Avoid putting the device in direct sunlight • Disable vibration/haptic feedback/sounds, etc. • Switch off smartphone when not in use		
	✓✓ (Any two)	2	
9.3.3	**TWO ways to evaluate the suitability of a study app**		
	• Check the feature list of the app • Read the reviews that other users have posted/Check number of stars that the app has • Check if a trial version is available • Check that the content is suitable for use in South Africa • Check that the app is compatible with your system/OS		
	✓✓ (Any two)	2	
9.3.4	**Reason why different platforms can be used**		
	Most apps are available for all mobile operating systems✓/Most apps are compatible with multiple operating systems/Many apps are cross-platform	1	7

9.4	*TWO reasons for not posting irrelevant content on the group*		
	• Time-wasting/Distracting • Inconsiderate/Offensive/Disrespectful to other users • Unnecessary data consumption for the members in the group • May provoke strong responses by other members which could lead to flaming/cyberbullying • Other users may miss important messages or posts/could leave the group ✓✓ (Any two)		2
9.5	*TWO ways to save electricity on computing devices*		
	• Switch off computers/devices when not in use • Select power-saving modes on the devices • Purchase energy efficient computers/components ✓✓ (Any two)		2
9.6.1	*Function of a UPS* To provide temporary power to a computer✓ to be able to shut down in the event of a power failure/Protects the computer against power fluctuations	1	
9.6.2	*Why a UPS does not help to save electricity* • Power is used to charge batteries • UPS has its own parts/components that draw extra power ✓ (Any one)	1	2
9.7.1	*Purpose of a patch* Fixes a bug in software ✓	1	
9.7.2	*Utility program to improve system performance* • Disk Defragmenter/Defragmentation • Disk Cleanup • System Restore • Resource monitor • Manage start-up programs through task manager • ScanDisk ✓ (Any one) *(Note to marker: Accept any valid third-party software, e.g. System Mechanic, CCleaner, etc.)*	1	2
9.8	*TWO ways in which shareware responds at the end of a trial period* • Partial/Full loss of functionality of software ✓ • Application will constantly prompt you to renew the licence ✓		2
			[25]

QUESTION 10: INTEGRATED SCENARIO

10.1.1	***ONE hardware component allowing for expanded storage on a smartphone (excluding Micro USB port/USB port)*** • Micro SD slot • Wireless network adaptor ✔ (Any one)	1	
10.1.2	***Purpose of front-facing camera in a smartphone*** • Video chat • For taking selfies • Security/Biometric security ✔ (Any one)	1	
10.1.3	***TWO requirements for NFC to work*** • Devices must be next to one another • Both devices should support NFC/be compatible • NFC must be enabled on both devices ✔✔ (Any two)	2	
10.1.4	***Similarity between Bluetooth and Wi-Fi*** Wireless communication✔/Uses radio waves, e.g. 2.4 GHz spectrum	1	5
10.2.1	***TWO reasons for publishing a website*** • Enhance professional image/credibility of the club • Keep club members and others informed • Promotional tool/Medium to showcase their activities/To raise awareness • Website is always available (24/7) • Communication and feedback/support to members/others • Targets a wider audience • To educate people on the dangers of drug abuse • Viewers can receive current information as the website can be regularly updated • School policy requires the publication of a website ✔✔ (Any two)	2	
10.2.2	***TWO ways to ensure information on a website is not offensive*** • Do not publish disturbing images • Do not use pictures/names of people without asking for their permission • Avoid slang or offensive language ✔✔ (Any two)	2	

10.2.3	***TWO ways to make the website user-friendly***		
	• Consistent layout on each web page • Ease of navigation • Readability/Typography – font style should be appropriate • Suitable colour schemes • Use of tool tips • Language should be easy to understand • Tour of the website for first time users • Correct use of white space/Avoid cluttering the web page • Ensure links are working		
	✓✓ (Any two)	2	
10.2.4	***Checking if browser connection is secure***		
	• Check for the lock image near the URL • Check that https is listed in front of URL • Check for green text in the URL bar • Verify the digital certificate • Antivirus programs mark websites as unsafe		
	✓ (Any one)	1	
10.2.5	***TWO reasons why some website elements may not display***		
	• Resources not saved in the correct folder • Incorrect path to resources • Incorrect spelling of tags/resource files • Latest version of html document not saved yet • HTML code has comment tags around certain elements • Sometimes tags are not closed • Browser does not support certain elements		
	✓✓ (Any two)	2	9
10.3.1	***TWO measures to secure user data***		
	• Install a firewall • Keep software updated • Restrict access to the database • Restrict access to the computers on which the data is kept • Change passwords frequently • Install and update anti-malware software • Encrypt the data		
	✓✓ (Any two)	2	4

10.3.2	**Unwanted e-mail** **Term** • Spam ✓/Junk mail **Solution** • Block e-mails from this domain • Use a spam filter/Unsubscribe from a mailing list • Use the blacklist feature of the e-mail software • Report spam to e-mail service provider ✓ (Any one)	2	
10.4	**TWO reasons for the limitations of Bluetooth** • Limited range • Limited number of devices that can be connected together • Slow throughput ✓✓ (Any two)		2
10.5.1	**DB function to calculate number of records in a group** Count ✓	1	
10.5.2	**Where to place a function to display group totals in DB report** Group footer/header ✓	1	2
10.6.1	**Concept of crowd funding** • A process where a single idea/business practice/charitable gesture ✓ • is funded by multiple small donations ✓ from volunteer contributors over the internet	2	
10.6.2	**ONE reason for NOT using crowd funding** • Has a limited lifespan and this project is an ongoing one • Members of the school club are probably under-aged/Crowd funding sites require one to be above the legal age limit • Drug rehabilitation may not be attractive to crowdfunders • The school club may not have the capacity to administer the fund, etc. ✓ (Any one)	1	3
			[25]

TOTAL SECTION C: **[50]**

GRAND TOTAL: **[150]**