



# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## **NATIONAL SENIOR CERTIFICATE**

**GRADE 12**

**COMPUTER APPLICATIONS TECHNOLOGY P2**

**EXEMPLAR 2014**

**MEMORANDUM**

**MARKS: 150**

**This memorandum consists of 15 pages.**

**SECTION A****QUESTION 1: MATCHING ITEMS**

1.1	I ✓	(1)
1.2	E ✓	(1)
1.3	G ✓	(1)
1.4	A ✓	(1)
1.5	C ✓	(1)
1.6	D ✓	(1)
1.7	H ✓	(1)
<b>Total: [7]</b>		

**QUESTION 2: MULTIPLE-CHOICE**

2.1	D ✓	(1)
2.2	A ✓	(1)
2.3	C ✓	(1)
2.4	B ✓	(1)
2.5	C ✓	(1)
2.6	A ✓	(1)
2.7	B ✓	(1)
2.8	C ✓	(1)
2.9	C ✓	(1)
2.10	A ✓	(1)
<b>Total: [10]</b>		

**QUESTION 3: TRUE/FALSE**

3.1	True ✓	1
3.2	False ✓ Public hotspots allow users to connect to the Internet using <u>Wi-Fi</u> ✓.	2
3.3	False ✓ A <u>form</u> in a database application is created in order to give a user an easy way to enter records into a table ✓.	2
3.4	True ✓	1
3.5	False ✓ The 'Print Screen' key on the keyboard takes a screenshot and sends it directly to the <u>clipboard</u> . ✓	2
<b>Total: [8]</b>		

**TOTAL SECTION A: 25**

**SECTION B****QUESTION 4: SYSTEMS TECHNOLOGIES**

4.1	USB 3.0 has a faster data transmission rate than USB 2.0✓		1
4.2.1	The term integrated refers to when certain hardware or features are incorporated/'built-in' into another device✓  <i>Note to marker: Accept explanation with suitable examples such as on-board controllers, etc.</i>	1	
4.2.2	<ul style="list-style-type: none"> <li>• Very difficult (in some cases impossible) to replace</li> <li>• If the video adapter stops working, you will need to replace the whole motherboard or buy a new, separate graphics adapter. In the case of a notebook this is impossible.</li> <li>• The video adapter shares RAM with other hardware, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	3
4.3	No✓  <ul style="list-style-type: none"> <li>• Limited storage space on the hard drive</li> <li>• CPU is a Celeron which would not suffice for a power user</li> <li>• Integrated graphics cannot handle high-end video editing or manipulation, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p> <p><i>Note to marker: Accept any other reasonable explanation based on other hardware items.</i></p> <p><i>Do NOT accept a simple 'no' answer without a motivation.</i></p>		3
4.4	HDMI✓		1
4.5	<ul style="list-style-type: none"> <li>• Portability/Can be easily taken to any classroom</li> <li>• Occupies less space</li> <li>• Standard notebooks have more Internet connectivity options</li> <li>• Can work on battery power, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>		2
4.6.1	An SSD is used to store data.✓	1	
4.6.2	<ul style="list-style-type: none"> <li>• Faster than a conventional hard drive</li> <li>• More robust</li> <li>• More energy efficient</li> <li>• Weighs less, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	3

4.7.1	<p>802.11n Wi-Fi✓ as the computer can be connected wirelessly to a network which in turn may provide a broadband Internet connection✓.</p> <p><b>OR</b></p> <p>10/100M LAN✓ as the computer can be connected wirelessly to a network which in turn may provide a broadband Internet connection✓.</p> <p><b>OR</b></p> <p>USB port✓ as a user can connect a 3G or Wi-Fi dongle to access a broadband Internet connection✓.</p>	2	
4.7.2	<ul style="list-style-type: none"> <li>• Devices can be moved easier and still retain their Internet connectivity</li> <li>• Less clutter/No cables</li> <li>• A broadband Internet connection can be made in locations where wired broadband infrastructure is not available, such as in rural areas.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	4
4.8.1	Windows 8✓	1	
4.8.2	<ul style="list-style-type: none"> <li>• Provides a user interface</li> <li>• Coordinates activities between hardware and software</li> <li>• Manages hardware and software resources</li> <li>• Provides basic security</li> <li>• Provides file management facilities</li> <li>• Provides a platform from where programs can be run, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p> <p><i>Note to marker: Accept specific examples, but not when more than one example refers to the same concept, such as more than one example referring to file management.</i></p>	2	
4.8.3	<p>Application Software.✓</p> <p><i>Note to marker: Also accept an answer that refers to a specific category of application software such as an office suite, but do not accept specific brand names.</i></p>	1	4
4.9	<ul style="list-style-type: none"> <li>• To ensure that the software performs optimally ✓</li> <li>• In effect a user will be able to use the hardware for a longer period, as it will be compatible with newer software for a longer period.✓</li> </ul>		2
4.10	<p>Disk fragmentation refers to parts of a file being scattered into non-sequential/contiguous/adjacent sections of a disk✓.</p> <p>This slows down a computer as all the parts must first be gathered, slowing down disk access in the process.✓</p>		2
			<b>[25]</b>

**QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES**

5.1	<ul style="list-style-type: none"> <li>• WAN (Wide Area Network)</li> <li>• GAN (Global Area Network)</li> <li>• MAN (Metropolitan Area Network)</li> <li>• VPN (Virtual Private Network)</li> </ul> <p style="text-align: right;">✓(Any ONE)</p> <p><i>Note to marker: Accept a specific example, such as an ATM network.</i></p>			1
5.2.1	An NIC is the physical connection between a computing device such as a computer and the communications medium, such as a cable✓.	1		
5.2.2	A switch is a network device where all of the connections from computers and devices are connected✓.	1		2
5.3	<ul style="list-style-type: none"> <li>• Pair your devices</li> <li>• Bring your devices within range</li> <li>• You may have to give permission for a file transfer to occur</li> <li>• Make sure you are trying to connect to the device you think you are connecting to, e.g. another device in range may have the same name</li> </ul> <p style="text-align: right;">✓(Any ONE)</p>			1
5.4	<ul style="list-style-type: none"> <li>• Use encryption e.g. WPA2</li> <li>• Add a strong access password, etc.</li> </ul> <p style="text-align: right;">✓(Any ONE)</p>			1
5.5	<p>Use a bookmark/favourite✓</p> <p><i>Note to marker: Do NOT accept the following</i></p> <ul style="list-style-type: none"> <li>• <i>Techniques that do not rely on a computer, e.g. writing down or memorising the website URL</i></li> <li>• <i>Simply starting to type a part of a URL in the address bar without having created a bookmark first (since the browsing history was deleted)</i></li> <li>• <i>Using a web-search (since the question specifically requests mentioning a function of a web browser)</i></li> </ul>			1
5.6	Advertisers pay the developer to show their advertisements within the app/program using banners or pop-ups.✓			1

5.7	<ul style="list-style-type: none"> <li>• Listen at a time suitable to you</li> <li>• Better quality sound</li> <li>• Save on data (using a less expensive Wi-Fi connection for downloads)</li> <li>• Avoid streaming issues, e.g. buffering</li> <li>• Podcasts can easily be distributed, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>		2
5.8.1	Web caching is a process where web pages previously accessed ✓ are stored on the hard drive✓.	2	
5.8.2	<ul style="list-style-type: none"> <li>• It improves browsing speed as pages can be loaded from the hard drive instead of being downloaded from the Internet✓.</li> <li>• Less data is consumed during the browsing process, as cached websites are not downloaded from the Internet✓.</li> </ul>	2	4
5.9	<ul style="list-style-type: none"> <li>• More bandwidth – better quality video</li> <li>• More bandwidth – smooth playback</li> <li>• Lower bandwidth can make watching videos online impossible</li> <li>• More bandwidth – one can get 'capped' quicker as higher bandwidth allows users to stream in higher quality, which uses more data, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>		2
			<b>[15]</b>

**QUESTION 6: INFORMATION MANAGEMENT**

6.1	<ul style="list-style-type: none"> <li>• Data refers to raw facts that are not useful on their own✓</li> <li>• Information is data that has meaning/been processed.✓</li> </ul>		2
6.2.1	<ul style="list-style-type: none"> <li>• Quicker for users to answer</li> <li>• Greater likelihood of respondent answering question</li> <li>• One can avoid problems of interpreting the handwriting of the respondents</li> <li>• They provide a finite/fixed range of answers</li> <li>• Easier to validate/capture/analyse responses, etc.</li> </ul> <p style="text-align: right;">✓✓(Any TWO)</p>	2	
6.2.2	<p>Spreadsheet.✓ Results from a questionnaire can be easily analysed using a spreadsheet ✓</p> <p><i>Note to marker: Accept a reasonable response in favour of databases such as references to creating queries and reports, etc.</i></p>	2	4
6.3	<ul style="list-style-type: none"> <li>• When there is a need to relate or link data</li> <li>• Easier to perform queries to find specific information</li> <li>• To produce reports</li> <li>• When graphical representation of results is not required</li> <li>• To provide an easier format for users to enter data using a form</li> <li>• Multiple users can edit the database at the same time</li> <li>• Databases have the capacity to store more data than a spreadsheet</li> <li>• When the bulk of the information entered is not numerical, etc.</li> </ul> <p style="text-align: right;">✓✓(Any TWO)</p>		2
6.4	The use of another author's expression of thoughts and ideas✓ and passing them off as one's own without permission.✓		2
			<b>[10]</b>

**QUESTION 7: SOCIAL IMPLICATIONS**

7.1	<ul style="list-style-type: none"> <li>• E-mail lottery scam (e.g. you are a lucky winner ...)</li> <li>• Phishing scams asking for Internet banking logon particulars</li> <li>• Advance fee fraud (the victim is asked to transfer money upfront)</li> <li>• A 419 scam, etc.</li> </ul> <p style="text-align: right;">✓(Any ONE)</p>		1
7.2	<ul style="list-style-type: none"> <li>• Spamming</li> <li>• Distributed Denial-of-Service Attacks</li> <li>• Brute-force dictionary attacks on servers</li> <li>• Unauthorised banner display</li> <li>• Click jacking, etc.</li> </ul> <p style="text-align: right;">✓(Any ONE)</p>		1
7.3	<ul style="list-style-type: none"> <li>• Use ergonomic input devices</li> <li>• Type using a natural wrist position</li> <li>• Sit up straight</li> <li>• Take regular breaks, etc.</li> </ul> <p style="text-align: right;">✓(Any ONE)</p>		1
7.4	<ul style="list-style-type: none"> <li>• You may start thinking that casual acquaintances on social networking sites are your real friends</li> <li>• Dangers of cyber-stalking/cyber-bullying</li> <li>• Danger of online predators/paedophiles</li> <li>• Someone you do not know may monitor your online presence and seek to benefit from it to your disadvantage</li> <li>• Social networks are very addictive, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>		2
7.5	<ul style="list-style-type: none"> <li>• Keep your password length as long as possible</li> <li>• Make sure passwords do not contain recognisable words</li> <li>• Never use the same password for more than one domain/ service</li> <li>• Your password should contain a mix of uppercase and lowercase letters, numbers and special characters</li> <li>• Encrypt your passwords</li> <li>• Make use of password management systems/software, e.g. KeePass, LastPass, etc.</li> </ul> <p style="text-align: right;">✓✓(Any TWO)</p>		2

7.6	<ul style="list-style-type: none"> <li>• May be used for legal downloads, e.g. open-source software</li> <li>• May be used to distribute documents or other files on which no copyright is applicable, etc.</li> </ul> <p style="text-align: right;">✓(Any ONE)</p>		1
7.7	<p>Answers relating to a lack of privacy:</p> <ul style="list-style-type: none"> <li>• Cookies</li> <li>• Facial recognition</li> <li>• Logging of IP addresses</li> <li>• Location-based services</li> <li>• Targeted advertising</li> <li>• Data surveillance, etc.</li> </ul> <p><b>AND/OR</b></p> <p>Answers relating to protecting one's privacy:</p> <ul style="list-style-type: none"> <li>• The use of proxy servers</li> <li>• Cleaning browsing history</li> <li>• Encryption</li> <li>• The use of a VPN</li> <li>• Browser options such as 'Incognito' mode and Do Not Track (DNT), etc.</li> </ul> <p style="text-align: right;">✓✓(Any TWO)</p>		2
			<b>[10]</b>

**QUESTION 8: SOLUTION DEVELOPMENT**

8.1.1	<p><code>&lt;h1&gt;CAT&lt;/h1&gt;</code> ✓</p> <p><i>Note to marker: Accept <code>&lt;h1&gt;</code> without the rest of the code.</i></p>	1	
8.1.2	<p>The text and background colour will both be black, making the text 'Hello World' invisible ✓</p> <p>A possible solution:</p> <ul style="list-style-type: none"> <li>• Change page background colour</li> <li>• <code>&lt;body&gt;</code></li> <li>• <code>&lt;body bgcolor='yellow'&gt;</code></li> <li>• Change font colour</li> <li>• <code>&lt;font color='white'&gt;Hello World&lt;/font&gt;</code></li> <li>• <code>&lt;font color='white'&gt;&lt;h1&gt;Hello World&lt;/h1&gt;&lt;/font&gt;</code></li> </ul> <p style="text-align: right;">✓(Any ONE)</p> <p><i>Note to marker: Accept any colour other than black</i></p> <p><i>Award a maximum of only ONE mark in total IF after the change both colours (background and font) are the same, e.g. <code>&lt;body bgcolor='red'&gt;AND&lt;font color='red'&gt;Hello World&lt;/font&gt;</code></i></p>	2	3
8.2.1	<ul style="list-style-type: none"> <li>• Group Footer</li> <li>• Group Header</li> </ul> <p style="text-align: right;">✓(Any ONE)</p>	1	
8.2.2	Query ✓	1	
8.2.3	<ul style="list-style-type: none"> <li>• VAT:[Price]*0.14</li> <li>• VAT:[Price]/100*14</li> </ul> <p style="text-align: right;">✓(Any ONE)</p> <p><i>Note to marker: Only the field name should appear between square brackets.</i></p>	1	
8.2.4	<ul style="list-style-type: none"> <li>• Table contains/stores records</li> <li>• Table is used to specific the fields, field types and their properties</li> <li>• Query is used to select records from the table</li> <li>• Query can create temporary, calculated fields</li> <li>• Query can be used to view selected fields, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	5

8.3.1	Save the document in an older format.✓ This will ensure that backward compatibility/formatting is retained when used with older versions of the application✓	2	
8.3.2	A feature to reflect information regarding the reference to a book or academic work.✓  Accept either one below✓: <ul style="list-style-type: none"> <li>• Used when one wants refer to another person's work an explanation</li> <li>• To show consultation of other sources to avoid plagiarism.</li> </ul>	2	4
8.4.1	COUNTIF – Counts the number of cells within a range that match a given condition✓ COUNTA– Counts the number of cells in a range that are not empty✓	2	
8.4.2	23.7✓	1	3
			<b>[15]</b>

**TOTAL SECTION B: 75**

**SECTION C****QUESTION 9: INTEGRATED SCENARIO**

9.1.1	<ul style="list-style-type: none"> <li>The integrated adapter takes up less space than a separate video adapter on the motherboard</li> <li>No need to purchase a video adapter</li> </ul> <p style="text-align: right;">✓ (Any ONE)</p>	1	
9.1.2	The video adapter does not have its own dedicated memory.✓ It shares/uses the RAM on the computer.✓	2	
9.1.3	<ul style="list-style-type: none"> <li>More intuitive to use by voters</li> <li>No need to use cumbersome keyboards or a mouse</li> <li>Less complicated for those who are not computer literate, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	5
9.2.1	<ul style="list-style-type: none"> <li>Easier to move around with a digital camera</li> <li>The average digital camera takes much better quality photographs</li> <li>More features such as ISO settings, scene selection, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	
9.2.2	<ul style="list-style-type: none"> <li>Using the cable supplied with the camera to connect the camera to the computer.</li> <li>Place the camera's memory card into a card reader on the computer</li> <li>Some digital cameras have a wireless functionality such as Bluetooth or Wi-Fi which will allow photographs to be transferred to the computer</li> <li>Using a memory card that has Wi-Fi capabilities (such as the Eye-Fi memory card), etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	
9.2.3	<ul style="list-style-type: none"> <li>Install a memory card with more storage space</li> <li>Lower the resolution of the photographs the camera takes, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	
9.2.4	<ul style="list-style-type: none"> <li>ISO speed</li> <li>Aperture</li> <li>Whether the flash was used</li> <li>The GPS location the photograph was taken at</li> <li>Camera brand and model</li> <li>Shutter speed, etc.</li> </ul> <p style="text-align: right;">✓ (Any ONE)</p>	1	7
9.3.1	A copy of data/information that is stored in a different physical place from the original data✓	1	

9.3.2	<ul style="list-style-type: none"> <li>• People forget to make backups regularly</li> <li>• Some people don't know how to make backups</li> <li>• Backups can be expensive to make due to the need for extra hardware, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	
9.3.3	<ul style="list-style-type: none"> <li>• Can access data from anywhere in the world where an Internet connection is available</li> <li>• Saves local storage space</li> <li>• Data is less likely to be lost, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	5
9.4.1	<ul style="list-style-type: none"> <li>• More space available for a larger screen</li> <li>• Keyboard layout can be changed as needed</li> <li>• The size and shape of the keys and keyboard can be adjusted via software, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	
9.4.2	A device that contains a mixture of the functionality/features of both a smartphone and a tablet ✓.	1	3
9.5.1	<ul style="list-style-type: none"> <li>• Biometric input accurately identifies the user</li> <li>• Much easier for users than typing in passwords</li> <li>• More difficult to 'get-around'/bypass, etc.</li> </ul> <p style="text-align: right;">✓(Any ONE)</p>	1	
9.5.2	A driver is software designed to allow the operating system and a hardware device to communicate/allow the operating system to control the device ✓	1	
9.5.3	<ul style="list-style-type: none"> <li>• The original supplier</li> <li>• The Internet (supplier's website or a third party website)</li> <li>• On a ROM chip integrated into the device</li> <li>• The driver might be included in the operating system</li> <li>• From someone who has the same device</li> <li>• From a computer store, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p> <p><i>Note to marker: Do not accept vague answers such as 'from a friend' or 'from a shop'.</i></p>	2	4
9.6.1	Inkjet/Photo printer ✓	1	
9.6.2	Laser printer ✓	1	2
9.7.1	<ul style="list-style-type: none"> <li>• Fragmentation</li> <li>• Antivirus software may be using too many resources</li> <li>• Too many programs loaded/not enough RAM available</li> <li>• Malware might have infected the computer, etc.</li> </ul> <p style="text-align: right;">✓✓ (Any TWO)</p>	2	

9.7.2	<ul style="list-style-type: none"> <li>• Press the Ctrl, Alt and Del buttons/Activate the task manager✓</li> <li>• Terminate the non-responding application✓</li> </ul>	2	
9.7.3	<ul style="list-style-type: none"> <li>• The printer may be disconnected from the computer</li> <li>• The printer may be switched off</li> <li>• The printer might not be installed correctly</li> <li>• There might not be paper in the printer</li> <li>• The printer might not have any ink/toner left, etc. ✓✓ (Any TWO)</li> </ul>	2	6
9.8.1	<ul style="list-style-type: none"> <li>• Blogs are easy to create</li> <li>• Blogs are usually free</li> <li>• Readers can subscribe to the blog for updates (via RSS)</li> <li>• Readers can leave comments on posts, etc. ✓✓ (Any TWO)</li> </ul>	2	
9.8.2	The parents can subscribe to RSS feeds✓.	1	3
9.9	The firewall will prohibit any unauthorised access to the network from the Internet✓.	1	
9.10.1	<p>Uncapped refers to the fact that there is no limit to the amount of data that can be uploaded or downloaded✓</p> <p>Shaped refers to limiting the speed of certain services, e.g. video streaming✓.</p>	2	
9.10.2	If more than a certain amount of data is downloaded or uploaded the download/upload speed of the line will be reduced✓.	1	4
9.11.1	<p>A patch is a small piece of software that is used to correct a specific problem with a program.✓.</p> <p>A service pack is a collection of patches/updates released as one download/installation media✓.</p>	2	
9.11.2	<ul style="list-style-type: none"> <li>• Activating the automatic update option</li> <li>• Click on the update option within the application</li> <li>• Manually download and install the relevant patch/service pack</li> <li>• Acquire a storage medium such as a CD with the required patch/service pack on it, etc. ✓✓ (Any TWO)</li> </ul>	2	
9.11.3	Installing shareware software allows one to first see if all the appropriate functions/features are available✓ so you don't waste money on software that does not meet your needs ✓.	2	6

9.12.1	E-mail spoofing refers to the process of altering an e-mail (header) so that the message appears to have come from someone other than the actual source/sender. ✓	1	
9.12.2	Stolen personal details are used by criminals to pretend that they are someone else. ✓  <i>Note to marker: Do not accept vague answers such as 'Stealing identities'.</i>	1	
9.12.3	Software (spyware) designed to track and record each keystroke a user makes ✓.	1	3
9.13	Addresses in the Cc field are visible to all other recipients ✓ Addresses in the Bcc field are not visible to other recipients ✓.		2

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