



NATIONAL SENIOR CERTIFICATE EXAMINATION  
NOVEMBER 2018

**COMPUTER APPLICATIONS TECHNOLOGY: PAPER I**

**MARKING GUIDELINES**

Time: 3 hours

150 marks

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**These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.**

**The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.**

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## **SECTION A**

### **QUESTION 1**

- 1.1 1.1.1 Cookie
- 1.1.2 "Hot" swapping
- 1.1.3 Windows Explorer
- 1.1.4 Apps
- 1.1.5 Clock speed
- 1.2 1.2.1 B
- 1.2.2 C
- 1.2.3 A
- 1.2.4 C
- 1.2.5 D
- 1.2.6 B
- 1.2.7 D
- 1.2.8 A
- 1.2.9 B
- 1.2.10 C

### **QUESTION 2**

- 2.1 2.1.1 hacker
- 2.1.2 bandwidth
- 2.1.3 Validation rule
- 2.1.4 SUMIF()
- 2.1.5 Utility software
- 2.1.6 Cc

- 2.2 2.2.1 **Metadata:** Data that tells you about the properties of the file, i.e. author **OR** Data to better identify the file when searched for on the hard drive. **OR** Data about the data can be accepted if the learner gives an explanation of what they mean, i.e. they explain that it is data about the data in the file.
- 2.2.2 **CAPTCHA:** A test to determine whether it is a human being interacting with the computer **OR** It takes the form of distorted letters and words that only humans can recognise and enter.
- 2.2.3 **BIOS:** The BIOS contains all the codes required to control the keyboard, drivers, monitor and many other functions **OR** Basic Input Output System **OR** loads the full operating system **OR** executes Power On Self Test.
- 2.2.4 **Product key:** The product key is a series of alphanumeric characters that is entered by the user during the installation of computer software to verify if the program is legal **OR** The product key ensures that there is no software piracy by controlling how many times software is loaded onto a device by referring to the number of users who entered the key.

**SECTION B**

**QUESTION 3      SYSTEM TECHNOLOGIES**

Question Number	Name of Item/Device	Main Function
3.1.1	Android Operating System or android device(phone) OR Android NOT just smartphone however if this was used then function can still be correct	Software that controls all the activities that take place on a mobile device. <b>OR</b> It is software that could be referred to as the platform as it controls and supports all the other software and hardware of a mobile device. <b>OR</b> When a mobile device is switched on, the operating system must first be loaded to control all the activities.  If phone need to reflect a phone's function anything a phone can do
3.1.2	Network Interface Card (NIC) Or Ethernet Port Or Lan Port  Not router	Allows communications to take place on a network. <b>OR</b> Contains a port for a wired device that is needed to connect to a network. <b>OR</b> Circuitry built onto the motherboard that allows devices to connect to a network.
3.1.3	Fingerprint Scanner <b>OR</b> Biometric Scanner	Technology that measures something biologically unique to you such as your fingerprint to give you access to hardware or software. <b>OR</b> Fingerprint scanners that are in new laptops/ smartphone that cannot be accessed without fingerprint authorisation.
3.1.4	Quick Response Code (QR Code)	It is a code designed to allow you to quickly obtain and enter longer text such as a web address simply by using the camera on your mobile device. <b>OR</b> It is a code that usually opens a webpage with more information on the item being scanned. <b>OR</b> A machine-readable code consisting of an array of black and white squares, typically used for storing URLs or other information for reading by the camera or an app on a smartphone.

3.2 3.2.1 HDMI

- 3.2.2
- It is a faster connection than VGA.
  - It is a high-definition connection as opposed to a standard-definition connection.
  - The quality of display is better/clearer/more defined than using a VGA connection.
  - Has Audio and Video on one string

(Any **ONE** of the above)

3.3 3.3.1 Click on the file, right-click and choose Send to ... > zipped folder or zip file (depending on the software that has been loaded on his/her computer) **OR** open a zipping program and compress the chosen files, be careful not just compress the software

3.3.2 Photos with a \*.jpg extension (do not accept PDF as it is stated in the question "apart from PDF") **OR** Image File **OR** multimedia file

3.4 3.4.1 **RAM:** Random Access Memory

If there are a number of applications or programs running and there is insufficient memory, it can slow the overall performance of the computer. **OR** The more memory you have available, the better your computer will perform as more data and programs can be loaded into memory for processing **OR** Adding RAM is often the cheapest and most effective upgrade as it affects the processing speed of all the programs on your computer.

(Any explanation that clearly indicates how the performance of the computer is influenced.)

3.4.2 **CPU:** Central Processing Unit

In general, the higher the speed (GHz), the faster the CPU will be **OR** This is the hardware component that performs all calculations and executes instructions **OR** The CPU fetches instructions and data that it needs to work on from RAM. **OR** having more Cores

(Any explanation that clearly indicates how the performance of the computer is influenced.)

3.4.3 **SSD:** Solid State Disk/Drive

The SSD is the place where data is stored permanently and it stores data electronically like a flash disk **OR** The SSD gives us fast data transfer speeds and it therefore makes sense that faster secondary storage can improve the overall performance of a computer system **OR** The size of your SSD is important due to all the programs that need to be stored on the SSD and is normally measured in GB/TB, etc. **OR** This is digital secondary storage that makes the process faster.

(Any explanation that clearly indicates how the performance of the computer is influenced.)

### 3.5 *Archiving*

#### **Explanation**

- To have information saved on a secondary system such as DVD for record and referral purposes when needed.  
**OR**
- This is to store data/files that are not going to be used on a daily basis.  
**OR**
- This is a process where you store files that are not going to change or be used in the near future and move them to another system to free up current disk space.
- Compress and save the Archive on the same drive then free up disk space.

#### **Example**

- A company can make copies of their financial reports from the last five years as they are not likely to refer to them again once tax returns are done.  
**OR**
- A school can keep records of Gr 12 data for a few years for any queries the school may have.

(Any explanation with an example that will refer to keeping records in a safe place for referral purposes only, not for making any changes to the data/files.)

### *Backup*

#### **Explanation**

- This is to keep a copy/duplicate of data/files in case something goes wrong where data/files can become corrupted/overwritten.  
**OR**
- This is to keep a copy/duplicate of data/files in case your data/files are deleted.

#### **Example**

- When working on a school assignment, keep a copy in case your computer should crash.  
**OR**
- Teacher can keep a record of learners' marks for the year and as the year goes on data can be added to previous work. Also this is a safety measure to have results should the data get lost.

(Any explanation with an example that will refer to keeping a copy/duplicate of data/files.)

## QUESTION 4 INTERNET AND NETWORK TECHNOLOGIES

- 4.1 4.1.1
- Communication software
  - Dial-up software
  - Software to connect to the internet
  - Web browser
  - Emailing program
  - Instant messenger
  - Operating system with networking software
  - Networking software

(Any **ONE** reasonable answer NO BRAND NAMES)

- 4.1.2
- Modem
  - Wi-Fi Router/Router
  - 3G/4G Connection – Dongle
  - Fibre cable + router
  - NIC

(Any **ONE** reasonable answer)

- 4.2 4.2.1
- Fewer cables.
  - More people can be connected to a wireless network.
  - Employees can connect anywhere in the company while walking around.
  - Employees are not confined to one desk.

(Any **ONE** reasonable answer)

- 4.2.2
- Transmitting can be slow.
  - Signal could be blocked that causes communication to fail.
  - Range could be limited.
  - Have to make sure that all laptops are wireless enabled.
  - Security not in place other can piggyback on the network

(Any **ONE** reasonable answer to do with a wireless connection)

- 4.3 **YES** (generally looking for *advantages* when yes)

- The software is always up to date.
- You don't have to download or install any costly/paid-for applications or software to access the resources.
- Access data from any computer or mobile device anywhere as long as you have internet connection.
- Does not use space on local computer.
- Sharing of documents with other employees who can work collaboratively on the same document at the same time.
- Documents are automatically backed up by the system.

(Any **TWO** of the above answers)

**NO** (Generally looking for *disadvantages* when answer is no)

- Cloud computing can only be used effectively if you have a fast, reliable internet connection.
- The organisation will not have control over security of data or backup policy.
- Monthly fee may have to be paid to make use of the services or to get access to the resources.
- Software may not have all the features or capabilities required by the organisation.
- Cloud computing might be slower as it is dependent on the internet connection.

(Any **TWO** of the above answers)

- 4.4 4.4.1
- Files/data will be uploaded to an online site.
  - The employees will receive a link or password for the relevant files/data.
  - This link will then be used to download the files to work on.

(Answer must include uploading/use of password – sign into account – to access/ download to receive full marks.)

4.4.2 filegooi, Google Drive, Dropbox, Microsoft OneDrive, iCloud

4.5 4.5.1 Internet Service Provider

- 4.5.2
- Email
  - Webpage hosting
  - Spam filtering
  - Fax-to-Email
  - Technical support
  - Voice services/Skype
  - Landline services

(Any **THREE** of the above answers)

4.5.3 Shaped connections means that preference is given to certain services on the internet such as email, downloading and browsing. Other services, such as online gaming and VoIP, are given a lower priority and are therefore slower.



## QUESTION 5      INFORMATION MANAGEMENT

- 5.1    5.1.1    • Shower  
                  • Laundry machine/Washing machine  
                  • Dishwasher  
                  • Irrigation  
                  • Topping up of your pool water  
                  • Toilet flushes  
                  • Use of basin water/kitchen sink water  
                  • Geyser

(Any **ONE** of the above answers)

- 5.1.2    • Has a garden hose been left on and water is being wasted?  
                  • Has your household exceeded its water usage for the day, week  
                          or month?  
                  • A running toilet.  
                  • You could have a burst pipe.  
                  • Maybe a tap in your house is dripping.  
                  • Irrigation pipe is leaking.  
                  • Someone going over 90-second shower limit.  
                  • If saying you get an email/sms, etc. that say you have a leak,  
                          gone over the limit etc. must justify the notification being specific  
                          on assisting in saving water

(Any **TWO** of the above answers)

- 5.2    • How many loads of laundry you are doing weekly.  
                  • The length of showers you take.  
                  • The water used to irrigate your garden or fill your pool.  
                  • How long you leave a tap open when brushing your teeth.  
                  • How much water you use when washing dishes.  
                  • How much water your household uses daily.

(Any **TWO** answers that can identify where the most water is used in the household can be accepted. Must be different from 5.1.2)

- 5.3    • Has the total household water usage exceeded 50 litres per person per  
                  day?  
                  • Has the total household water usage exceeded 10 500 litres per month?  
                  • Will the household have to pay a fine for excessive water use?

(Any **TWO** of the above answers)

5.4 5.4.1 Excel Spreadsheets **OR** Access Databases. Cross out the brand name if preceding the software.

5.4.2 Spreadsheets:

- You can draw up graphs to compare previous months' with current month's use of water.
- You can do calculations to work out the average water use of the household appliances.
- When the City of Cape Town wants to give you a fine because in their opinion you used too much water, you have evidence to confirm your water usage by showing this in your spreadsheet you created.
- You can use a rolling average to show how water was saved over a period of time or how water was wasted.

Database

- Queries and reports can be created for weekly/daily/monthly reports

(Any **ONE** of the above answers but must reflect on the program chosen)

## QUESTION 6 SOCIAL IMPLICATIONS

- 6.1 6.1.1
- The writer had to do excessive research by going out and finding information whereas with digital media research is available through websites/blogs/twitter and there is more interaction with the readers.
  - Legacy media is being replaced by digital platforms whereby social media managers can give feedback on the connections between the people and the data.
  - Social media does better as it has an in-depth understanding of the audience as individuals, not only demographics, and therefore produces more in-depth content based on its target audience.
  - Newspapers can now shoot video and make it part of the story and a radio station can write blogs and use Facebook as part of their show to interact with their audience.

(Any **TWO** of the above answers where the learner's focus must be on the interaction that takes place with the new technology from the user and the writer's perspective)  
Eco friendly as long as they justified.

- 6.1.2
- Take a disciplined and structured approach to dealing with information by creating a routine that limits the time you spend interacting with information.
  - Filter emails into categories.
  - Use RSS feeds to structure news you read to limit browsing the web.
  - Make use of advanced searches and good search terms to help you find information when looking on the web.

(Any **THREE** of the above answers)

6.2 *Social bookmarking* refers to the sites the user browses often and lets other users see what they bookmark – Save/collect/pin/store and many of these bookmarks let you see how many times a particular site has been bookmarked. There is no interaction between the users.

*Social networking* refers to sites like Facebook, Myspace, Twitter and Instagram that are dedicated websites and applications where users interact with other users and find people with similar interests to their own.

6.3 6.3.1 As it wants to con readers to share personal information.

- 6.3.2
- Whaling
  - Spear phishing
  - Spoofing
  - Pharming

(Any **ONE** of the above)

## QUESTION 7 SOLUTION DEVELOPMENT

7.1 7.1.1 A heading style was not used and to fix this all you need to do is to change all the headings in the document to any suitable heading style and to update the table of contents.

**OR**

A different type of style, for example own style/subtitle, etc., was used and to fix the table of contents you need to make sure that the preferred style was selected in the table of contents option dialogue box for the table of contents to work.

(Any **ONE** of the above)

7.1.2 Use Paste Special  
Merge formatting into document which is being copied.

7.2 =IF (C3="Female", "New", "Old") - 1 if Inverted commas not use

(Do not just assume that answer is incorrect if an alternative is suggested, for example, a VLOOKUP)

7.3 >\E L 000<LLL Must have \

7.4 <a href=https://www.JusticeLeagueLounge.com>  
Visit JusticeLeagueLounge </a>

*For the above answer make sure that:*

- *All is correct especially https (as question said it was a secure website for the 1st mark.*
- *Spelling for the webpage is important for the 2nd mark.*
- *However, if the alternative text Visit JusticeLeagueLounge has a spelling error, still award the 3rd mark.*
- *Closing the Tag is what we are looking for to award the 4th mark.*

## SECTION C

### QUESTION 8 INTEGRATED SCENARIO

8.1 8.1.1 It is where two or more computers are configured (No controlling server) to allow certain files, folders and devices to be shared.

8.1.2 A cloud server allows the user to share hardware with other customers as opposed to a dedicated server where the hardware is only for the use of the company.

**OR**

Cloud server security resides on a shared virtualised environment that is managed by your cloud-hosting provider whereas the security of a dedicated server is hosted on physical hardware that is solely dedicated to the company.

**OR**

For a cloud server the company pays an amount to use the server space without having to pay an IT specialist to manage the server while a company using dedicated servers needs IT capacity and expertise to manage the ongoing maintenance and space available on the server.

**OR**

A cloud server will allow you to access your resources online within minutes anywhere at any time. A dedicated server can take some time to access your resources as you need to connect first and if the server is down you cannot access any data.

(There must be a clear comparison between the different servers to award full marks.)

(Any **TWO** of the above)

8.2 8.2.1 Radio Frequency Identification

8.2.2 It is a small chip that stores and transmits data and it works over a relatively short range.

**OR**

It is a tag with information that is activated by radio frequency signals to communicate with a device that receives the data.

**OR**

Data is loaded on this card that can only be read by an RFID tag reader when the radio frequency signal is close by for receiving of information.

8.2.3 In the hotel environment, data about the guests can be loaded on the card and this would then be used to gain access to their rooms.

**OR**

The use of the elevator.

**OR**

When going for breakfast, lunch or supper, they can be charged.

(Any **ONE** of the above)

8.3 8.3.1 She will need to use the Search and Replace/Find and Replace option.

- 8.3.2
- So you can give more detailed explanations of text in the report.
  - Make comments on certain statements in the report.
  - Refer to the source from which certain facts were obtained.
  - Supply the name of someone who has been quoted.
  - The information appears on the same page of the text that is explained Bullet ONE alternative.

(Any **THREE** of the above answers)

- 8.3.3
- Compatible across various platforms.
  - Compressed, therefore smaller when emailed.
  - Layout and formatting won't change when printed.
  - Can be created from any source document.
  - Software to view pdf files is free.
  - Secure, almost no chance of getting infected with viruses.

(Any **TWO** of the above answers)

8.3.4 You create your document as normal and then you can use the Save As option that allows you to export the document as a pdf.

**OR**

You can use pdf creation software.

8.3.5 Portable Document Format

8.4 Hits refer to the **number** of people that has visited the website.

**OR**

The number of times there were file requests from a webserver.

- 8.5 8.5.1
- He can reboot his phone by turning it off and on again/reload/refresh the app
  - He needs to make sure that he downloaded the latest version of Google Maps.
  - He needs to make sure he has the latest Google Play software downloaded.
  - He can check his cache data to see if it is preventing the Google Maps app from running.
  - There may be an issue with his battery or device not being sufficiently charged to run the app.
  - The built-in GPS could be switched off to conserve power/Switch on the GPS Location
  - He could reset his device to factory settings.
  - Switch on Mobile DATA

(Any **TWO** of the above answers)

- 8.5.2
- Can record your cycling speed in km per time.
  - Can record your distance cycled.
  - Can record how many calories you burnt.
  - Can give a graphical presentation of your performance.
  - Can record your interval times.

(Any **TWO** of the above answers)

- 8.5.3
- The software on his computer is out-dated and he needs to install a new version of the software.
  - The file program might not be installed on his device.
  - File could be corrupted during downloading and he needs to download the file again.
  - He needs to check if he has enough memory to open the file.
  - He may not have associated the program with that file.

(Any **TWO** of the above answers)

- 8.6 8.6.1 A quad-core processor is a chip with four independent units called cores that read and execute central processing unit instructions to manage the data.

The Turbo boost increases the clock speed of each core individually to get better performance out of the chip.

- 8.6.2 64 Gigabyte Embedded Multimedia Card  
This is usually found in smartphones and 2-in-1 devices and is another form of storage.

- 8.7 8.7.1 Contrast ratio is the difference between the darkest black and the whitest white that the display can produce. The higher the contrast ratio the clearer and sharper the image will appear.

- 8.7.2 Resolution is the number of horizontal and vertical pixels that a screen can display. This will determine how many images can fit on the screen. OR Quality blurry/better/bad of the image

- 8.8 2-in-1 device is ...
- Versatile with a flip-screen that provides four-way flexibility viz. tablet mode, laptop mode, stand mode and tent mode.
  - More robust than a normal notebook, which means it can take a few knocks.
  - Lighter than a normal notebook.
  - A good 2-in-1 device can easily perform as a smartphone/tablet/laptop, avoiding buying many gadgets.
  - A 2-in-1 device is known for its touch screen.
  - Smaller in size, so easy to manage when out and about.
  - If on negative side then confirm the reasons.

(Any **THREE** of the above answers)

8.9 The earlier versions of Bluetooth was used in cell phones, wireless Bluetooth headsets and Bluetooth connections found in laptop computers where the main purpose was to transmit data (for example images, music, etc.) using short wavelength radio transmissions.

Bluetooth 4.0 is designed primarily for devices that collect information frequently, either as often as five times a second or just once every hour, for example heart rate, glucose levels, number of steps walked, etc.

- 8.10
- Open-source software is not supported in all geographical areas.
  - Some employees may not understand the technical help offered on the internet.
  - No one to hold responsible if program is not working.
  - There are various versions of the same software that could have an influence on the way work is done in the company.
  - Resistance to change/comfortable with what they know.
  - Not as widely used, etc.

*(Do not accept generalised answers such as "not as good" or "has bugs", etc.)*  
(Any **ONE** of the above answers)

- 8.11
- A lot of damage could have been caused by the virus if only detected two months after infection, etc.
  - Anti-virus definitions and programs should be updated as new virus signatures are developed every day.
  - Because the employees share information, multiple users can be affected.
  - The company runs the risk of losing important data that can cause the company to close down.

(Any **TWO** of the above answers)

- 8.12 8.12.1
- It would save time as the data would be captured immediately (anything relating to time/money saving in this bullet)
    - It would provide potentially more accurate data if the system is suitably designed (e.g. if the system has no fields or pieces of information missing).
    - The system can be quickly adapted if there is additional data that needs to be captured, etc.
    - Can be completed any time of the day.
    - Saving the environment need to be explained for example not printing

(Any **TWO** of the above answers)

8.12.2 Vodcasting is video podcasting or vlogging; this is to download video that is added to the podcast. Podcasting is just the downloading of audio files.

8.13 Green computing refers to the use of (computer) technology in a way that is sensitive to the environment.

**Total: 150 marks**