



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2018

COMPUTER APPLICATIONS TECHNOLOGY: PAPER I

Time: 3 hours

150 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 15 pages. Please check that your question paper is complete.
 2. The paper is divided into Section A (25 marks), Section B (75 marks) and Section C (50 marks).
 3. Answer ALL the questions.
 4. Number your answers exactly as they appear in the question paper.
 5. Non-programmable calculators may be used.
 6. It is in your own interest to write legibly and to present your work neatly.
 7. Read the questions carefully. Take note of the wording of the questions, i.e. explain, name, select, discuss, identify, etc. and then answer accordingly.
 8. Give your answers in general terms. Use brand names only when asked, e.g. use "word processor" rather than "Microsoft Word" or "WordPerfect".
 9. In general, a mark is allocated per fact. Therefore, a two-mark question would require two facts, and so on.
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SECTION A

QUESTION 1

1.1 Choose the correct word(s) in Column B that **BEST** describe(s) the definition in Column A. Write down **ONLY** the word(s) of your choice next to each question number.

	Column A	Column B
1.1.1	A file sent to a web browser by a web server that is used to record your activities on a website.	Plug-Ins
1.1.2	A method of connecting peripherals to a computer whereby devices are plugged into the computer without switching the computer off.	Windows Explorer
1.1.3	This is a program used to easily view the contents of your computer and manage your files.	Clock speed
1.1.4	Programs/software on a smartphone or tablet, e.g. calendar, are called this.	"Hot" swapping
1.1.5	Determines how quickly the CPU can execute basic instructions.	Attachment
		Internet Explorer
		Cookie
		Apps
		Baud rate
		Plug and play

(5)

1.2 Select the **MOST** appropriate answer to each question. Write down **ONLY** the letter of your choice next to each question number.

1.2.1 Which one of the following statements about adware is **FALSE**?

- A Adware is software that causes disruptive and unwanted advertising to appear on your computer.
- B Adware can only be installed on a computer with the user's permission.
- C Installation of adware may be voluntary in exchange for a product or service.
- D A form of malware normally consisting of pop-up and other advertisements.

(1)

1.2.2 Which **ONE** of the following allows users to connect to an online internet server through a wireless connection such as Wi-Fi?

- A WAP
- B SSID
- C WISP
- D WIP

(1)

- 1.2.3 The Digital Divide refers to ...
- A the gulf between those who have ready access to computers and the internet, and those who do not.
 - B the gap that exists with regard to the quality of the pixels on a monitor.
 - C the ability to understand the different technology options that are available to all.
 - D a new term used to describe the digital world of computers. (1)
- 1.2.4 When entering a password, you need to remember that it is "case-sensitive". This means that ...
- A all the letters must be mixed up with characters and numbers.
 - B the password must contain upper- and lower-case characters.
 - C the letters in the password must have the same case as when the password was first created.
 - D all the letters must be sensitive to capital letters. (1)
- 1.2.5 Which one of the following terms does **NOT** fit into the list?
- A Officejet
 - B Laserjet
 - C Ppm
 - D QWERTY (1)
- 1.2.6 This is a typical network of computers that only allows access to secure communications within a company.
- A Personal Private Network
 - B Intranet
 - C E-mail
 - D Internet (1)
- 1.2.7 What could a possible solution be for a blank display on the screen when connecting a different monitor to the system unit does not solve the problem?
- A Install more memory.
 - B Delete all temporary files that are on the hard disk.
 - C Switch off the "safe mode" option.
 - D Replace the graphics card. (1)
- 1.2.8 A USB port is used to connect peripherals to a computer. If you have a limited number of USB ports you can use a USB _____ to extend the number of ports.
- A hub
 - B bridge
 - C extension cable
 - D modem (1)

1.2.9 Which **ONE** of the following statements about a firewall is **TRUE**?

- A A firewall is not needed if you have an internet connection.
- B Communication between the computer and the internet is monitored by the firewall.
- C A firewall allows someone to access the computer illegally.
- D A firewall needs to be updated daily to identify software piracy when on the internet.

(1)

1.2.10 The controlling computer in a secure network is called a ...

- A terminal.
- B host.
- C server.
- D client.

(1)

[15]

QUESTION 2

- 2.1 Choose the **MOST** appropriate term (underlined and given in brackets) for each statement that follows. Write **ONLY** the term of your choice next to each statement number.
- 2.1.1 A (hacker/cracker) considers unauthorised access to a computer or network as a challenge. (1)
- 2.1.2 The maximum amount of data that can be transmitted from one point to another along a communication channel, in a given time period, is called (broadband/bandwidth). (1)
- 2.1.3 (Validation rule/Validation text) is the condition the data must satisfy in a specified field in order to be valid. (1)
- 2.1.4 The (COUNTIF()/SUMIF()) function adds together the values contained in a number of cells that satisfy a given condition or criteria. (1)
- 2.1.5 (Utility software/The task manager) assists the user in organising, maintaining and improving the efficiency of a computer system. (1)
- 2.1.6 (Bcc/Cc) allows a user to send a copy of an e-mail to other recipients with the full awareness of the original recipient. (1)
- 2.2 Give an appropriate definition that would **BEST** describe the following terms.
- 2.2.1 Metadata (1)
- 2.2.2 CAPTCHA (1)
- 2.2.3 BIOS (1)
- 2.2.4 Product key (1)
- [10]**

25 marks

SECTION B

QUESTION 3 SYSTEM TECHNOLOGIES

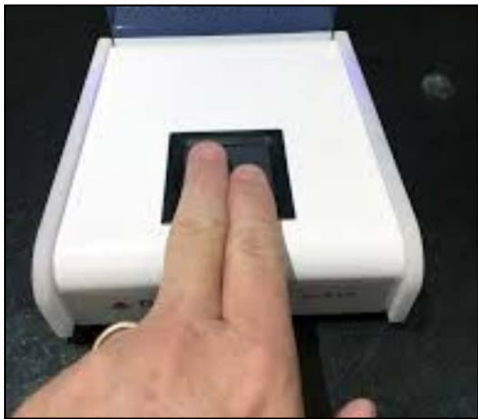
3.1 Identify the item/device in the pictures below and complete the table according to the instructions.



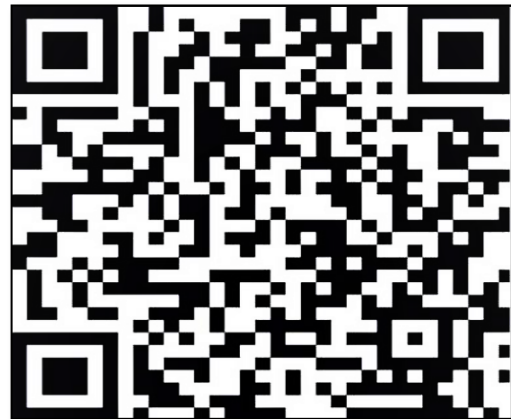
3.1.1



3.1.2



3.1.3



3.1.4

Draw the following table in your Answer Book. Write the name of each of the items/devices in the second column followed by its main function in the third column.

Question Number	Name of Item/Device	Main Function
3.1.1		
3.1.2		
3.1.3		
3.1.4		

(8)

- 3.2 When purchasing a new computer it is advisable to consider the video connection ports that are available. Most computers offer a **VGA** and/or an **HDMI** connection.
- 3.2.1 Which is the better connection to have? (1)
- 3.2.2 Justify your choice in Question 3.2.1. (1)
- 3.3 You would like to share some files with a friend and you want to save the files on a memory stick. There is not much space on the memory stick and you do not want to delete any files.
- 3.3.1 Briefly explain how you would go about compressing all the files to be able to fit the files on the memory stick. (1)
- 3.3.2 Which type of file, apart from a PDF, does not really compress the files when using this method? (1)
- 3.4 Expand the acronyms given AND explain how these three crucial hardware components influence the performance of a computer.
- 3.4.1 RAM (2)
- 3.4.2 CPU (2)
- 3.4.3 SSD (2)
- 3.5 You want to free up some disk space and a suggestion was made that you **archive** your files, as making **backups** of your files will not have the same result.
- 3.5.1 Explain each concept given in bold above. (2)
- 3.5.2 Give **ONE** example of each concept given in bold above that clearly explains the difference between the two concepts. (2)

[22]

QUESTION 4 INTERNET AND NETWORK TECHNOLOGIES

- 4.1 When choosing an internet connection, an organisation would need to consider how to connect a computer to the internet.
- 4.1.1 Recommend **ONE** software program to consider when organisations want their employees to gain access to the internet. (Do not use brand names.) (1)
- 4.1.2 Recommend **ONE** essential hardware device required to connect the organisation's computers to the internet. (1)
- 4.2 The organisation will allow laptop computers to connect to their network using a wireless connection.
- 4.2.1 Give **ONE** advantage of wireless connection. (1)
- 4.2.2 Give **ONE** disadvantage of wireless connection. (1)
- 4.3 The owner of the organisation is considering making use of cloud computing.
- Clearly motivate, by giving **TWO** reasons, why you are either against or for the suggestion. (2)
- 4.4 When storing data "in the cloud" the organisation will have to install free software on the laptops and then register with the cloud.
- 4.4.1 How would the employees within the company share and access files? (3)
- 4.4.2 Give **ONE** BRAND NAME of an online storage service that the organisation could use. (1)
- 4.5 An ISP could provide wireless or wired internet access.
- 4.5.1 Expand the acronym ISP. (1)
- 4.5.2 List **THREE** other services that could be offered by an ISP. (3)
- 4.5.3 In terms of the different types of internet connections, most organisations would prefer a shaped connection. Explain why this is the case and use an example to motivate your answer. (4)

[18]

QUESTION 5 INFORMATION MANAGEMENT

Insufficient rainfall and fast-declining dam levels are the main reasons why there is a drought in the Cape Town area. In order to overcome this drought, everybody needs to work together. Level 6B water restrictions are in effect as of 1 February 2018. All households are expected to use not more than 50 litres per person per day and households using more than 10 500 litres of water per month will be fined or have water management devices installed on their properties. The City of Cape Town will use water meters to measure the use of water.

1

- 5.1 Your household did some research and found that, according to www.kickstarter.com, *FLUID* is the world's first learning water meter. You simply snap the device around the main water pipe coming into your home, plug it into a power source and connect it to your Wi-Fi network. You will then be able to see your usage in real time from any connected device.



- 5.1.1 When you activate the device, you can create a list of appliances to be identified with regard to water usage in the household. This list will help *FLUID* to identify a particular appliance every time it is used. List at least **ONE** appliance that could be identified to determine how much water is used. (1)
- 5.1.2 The *FLUID* device can send notifications to your smartphone. What kind of notification would you expect to receive? List at least **TWO** types of notifications that could assist you in saving water. (2)
- 5.2 The *FLUID* device will enable you to become more aware of the amount of water you use. What do you hope to learn from the data that you have collected? Give **TWO** examples of what data about water usage you could be made aware of. (2)

¹ [Source: <www.capetown.gov.za>]

- 5.3 The data is stored on your computer. Give **TWO** examples of what useful information can be calculated using this data. You need to refer to the scenario in your answer. (2)
- 5.4 Your household is working towards saving water and for this reason, keeping a record of the data received from your *FLUID* water meter could be valuable to your family and as proof to the City of Cape Town should they query your water usage.
- 5.4.1 What kind of application software will you use to process the data? (1)
- 5.4.2 Give **ONE** explanation for your choice in Question 5.4.1. (1)
- [9]**

QUESTION 6 SOCIAL IMPLICATIONS

With the use of technology today, we are so used to having information at the press of a button that we cannot imagine our lives without technology.

- 6.1 Legacy media is a term associated with the use of old media (hardcopy, print newspapers, magazines, periodicals).
- 6.1.1 Why is legacy media becoming obsolete compared to the digital media that is available for receiving information? (2)
- 6.1.2 Digitisation of media has had a great impact on the global community and has caused information overload. Give **THREE** ways of how people can cope with information overload. (3)
- 6.2 Pinterest² is a web and mobile application company that is summarised as a "catalogue of ideas". It was launched in 2010 and, with over 70 million users, Pinterest has made quite a splash in the social bookmarking world.
- Explain the difference between **social bookmarking** and **social networking** that form part of social media. (4)
- 6.3 People sometimes receive e-mails that seem too good to be true; for example, that they have inherited money. They are then enticed to give out personal information.
- 6.3.1 Why is the general saying: "if it looks too good to be true, then it is too good to be true" often associated with phishing? (1)
- 6.3.2 Give an example of another technique that can be used to get computer users' personal information. (1)
- [11]**

² [Source: <<http://en.wikipedia.org/wiki/pinterest>>]

QUESTION 7 SOLUTION DEVELOPMENT

The PAT assignment forms part of the CAT School-Based Assessment (portfolio). There are a few options you can use to accomplish your goal of presenting your information professionally. The following questions present themselves to you as you enthusiastically finish off the assignment.

7.1 Your teacher recommended an automatically generated table of contents. Every time you attempt to create a table of contents, the following message appears.

No table of contents entries found.

7.1.1 Knowing that you used styles, what could the reason be for the above message, and how can you fix the problem? (2)

7.1.2 When you copy and paste information to your word processing document, you are sometimes forced to change the font and format. This is a frustration and wastes time. How can this be prevented? (2)

7.2 You will use a spreadsheet package to assist you with some calculations in your assignment. Refer to the spreadsheet information below. Write down a possible formula/function that was used to get the result in Column **D3**. (4)

	A	B	C	D
1	Dressing Room Allocations			
2	Surname	Name	Gender	Dressing Room
3	Stark	Tony	Male	Old
4	Wayne	Bruce	Male	Old
5	Johansson	Scarlett	Female	New
6	Fox	Megan	Female	New
7				

7.3 A database table needs to be created to restrict the capturing of a code. Give the input mask that you would use to satisfy the restriction according to the following example: EB263rts. Keep in mind that every code must start with a capital letter E followed by another capital letter, three digits and three letters. (3)

7.4 You would like to display a link on a webpage you are developing for browsers to visit the following secure website: **www.JusticeLeagueLounge.com**. What html code would you create to entice the user to click on the link to visit the above-mentioned webpage? (4)

[15]

75 marks

SECTION C

QUESTION 8 INTEGRATED SCENARIO

Cape Town Cycle Tour 2018

Place: Cape Town (11 March 2018)



Book a travel package here

Cape Town Cycle Tour (formerly known as the Cape Argus) is the largest timed cycle event in the world and arguably the most scenic. Attracting more than 35 000 cyclists from around the globe each year, this prestigious event is definitely a unique experience for participants and spectators alike. Both participants and spectators need to book accommodation in advance for this event.

8.1 The MyCapeTownStay.com website is Cape Town's leading online booking service for accommodation, hotels, car rentals, etc. The Chief Executive Officer (CEO) of the company heard that a *peer-to-peer network* can lower IT infrastructure costs.

8.1.1 Define the term *peer-to-peer network*. (2)

8.1.2 When you set up a *peer-to-peer network* there is no need for a dedicated server, as the company will make use of a cloud server. Name **TWO** differences between a cloud server and a dedicated server. (4)

³ [Source: <www.mycapetownstay.com>]

- 8.2 When booking a hotel with MyCapeTownStay all guests are informed that they will make use of an RFID access card.
- 8.2.1 What does the acronym RFID stand for? (1)
- 8.2.2 Briefly describe how RFID technology works. (2)
- 8.2.3 How will the RFID card be used by the guests within the hotel environment? (1)
- 8.3 The CEO of MyCapeTownStay would like to receive monthly reports on how successful they are, and whether they need to make any adjustments to their website or the way they operate as a business.
- 8.3.1 The secretary created a report in a word processing document. However, the CEO was not happy with the spelling of the name of one of the hotels. The hotel's name was spelled "Njalla" and the correct spelling is "Njala". How can the secretary fix this without re-typing all 50 occurrences? (1)
- 8.3.2 List **THREE** reasons why it would be advisable to make use of *footnotes* in a company report. (3)
- 8.3.3 Once the report is created the CEO suggests that the report be created in *pdf* format. List **TWO** advantages of creating a *pdf* document, apart from preventing someone from making changes. (2)
- 8.3.4 How can you convert the word processing document into a *pdf* document? (1)
- 8.3.5 Expand the acronym PDF. (1)
- 8.4 When the CEO read the report he noticed that their website had quite a few *hits*. What does the term *hits* refer to? (1)
- 8.5 Mr Tony Stark wants to train for the Cape Town Cycle Tour to ensure that he is fit and ready for the challenge.

When searching for training apps for cyclists, one of the most obvious apps that cyclists often neglect is Google Maps. Mr Stark decides to make use of this app as Google Maps allows you to create ride routes on your computer, and then export them as GPS files to your cycling computer device.


- 8.5.1 When Mr Stark wants to start his route, the Google Maps app is not working on his cycling device. Give **TWO** possible solutions to fix this problem on his mobile device. (2)
- 8.5.2 The "Cyclemeter" fitness app utilises the GPS functions to create a host of statistics to help you log and improve your cycling performance. List **TWO** possible statistics you hope to log to help you improve your performance every time you cycle. (2)

8.5.3 Mr Stark downloaded an attachment that contained a new cycling program, but the file does not want to open. Discuss **TWO** possible reasons for this error. (2)

8.6 The CEO of MyCapeTownStay did a survey within the company and there seems to be a need for more up-to-date technology.

There was a request to have 2-in-1 devices instead of notebooks.

The following 2-in-1 device is being considered. The use of a Smart Hinge design that gives up to 170° of movement and the 11 hours of battery life are two reasons for considering this device.

	<p>ASUS Transformer Book (T102HA-GR044T) 10.1-inch Touchscreen 2-in-1 Laptop Tablet Intel Atom x5 Z8350 1.44 GHz/1.92 GHz Turbo Quad Core Processor, 4 GB RAM, 64 GB eMMC, 1 280 × 800 Screen Resolution, Detachable Keyboard, Wi-Fi, Bluetooth 4.0, Windows 10</p> <p>R10 500.00</p>
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8.6.1 What is the function of the Turbo Quad Core Processor? (2)

8.6.2 Expand the acronyms 64 GB eMMC, and explain why the specification was given. (3)

8.7 The CEO is confused about the specification with regard to the screen. Explain the following key specifications to look out for when purchasing any display device, especially when working with images, etc.

8.7.1 Contrast ratio (2)

8.7.2 Resolution (2)

8.8 Why would the employees prefer a 2-in-1 device over a notebook? In your answer you need to clearly differentiate between a 2-in-1 device and a notebook by giving **THREE** reasons for your answer. (3)

8.9 Bluetooth 4.0 made a big impact in the personal fitness and health market and quickly replaced the earlier versions of Bluetooth. Using suitable examples, explain how the protocol of Bluetooth 4.0 differs from the earlier versions of Bluetooth. (4)

8.10 Give **ONE** reason why the CEO would like to use proprietary software such as Microsoft Office instead of an open-sourced, free software package such as OpenOffice. (1)

- 8.11 The CEO is concerned about computer virus infections and suggests that the 2-in-1 devices need to be scanned for viruses at least once every two months. Give **TWO** examples you would use to explain to the CEO why it is not good policy to scan for viruses only once every two months. (2)
- 8.12 One of the employees is assigned to gather suitable material from the internet to be used when bookings are made.
- 8.12.1 For this reason, a questionnaire was created and placed on the website for potential Cycle Race participants to complete. Give **TWO** possible benefits of allowing the questionnaires to be completed online. (2)
- 8.12.2 The employee found some vodcastings of hotels that can be used to promote hotels and places of interests in Cape Town. Briefly explain what vodcasting is and how this differs from podcasting. (2)
- 8.13 All the existing desktop computers of MyCapeTownStay will be donated to a small start-up business. The CEO wants to make sure that this small business is committed to green computing.
- Briefly describe what green computing refers to. (2)

50 marks

Total: 150 marks