Province of the EASTERN CAPE EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2022

COMPUTER APPLICATIONS TECHNOLOGY P2

MARKS: 150

TIME: 3 hours

This question paper consists of 17 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of:

    SECTION A (25 marks)
    SECTION B (75 marks)
    SECTION C (50 marks)

2. Answer ALL the questions.

3. Number the answers correctly according to the numbering system used in this question paper.

4. Start EACH question on a NEW page.

5. Do NOT write in the right-hand margin of the ANSWER BOOK.

6. Leave a line after EACH sub-question.

7. Generally, one mark is allocated per fact; therefore, a 2-mark question would require TWO facts, etc.

8. Read the questions carefully. DO NOT give more than the question requires as this will NOT be marked.

9. All answers MUST be related to Computer Applications Technology.

10. Answers such as 'cheaper', 'slower'/'faster' and 'easier' will ONLY be accepted if it is used together with a reason or an explanation.

11. Do NOT use brand names in your answers, unless specifically required.

12. Write neatly and legibly.

SECTION A

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (1.1 to 1.10) in the ANSWER BOOK, for example 1.11 D.

1.1   The main task of a Disk Defragmenter utility is to …

        A   delete individual files selected by the user.
        B   automatically delete unused files.
        C   format the hard disk when it is full.
        D   reorganise files and keep related files together.   (1)

1.2   Which ONE of the following acronyms is NOT associated with hardware?

        A   SSD
        B   BYOD
        C   EULA
        D   GPU   (1)

1.3   A(n) … is an example of malware.

        A   ad-blocker
        B   popup
        C   spam filter
        D   keylogger   (1)

1.4   The … tab on the Microsoft Word ribbon includes functions such as accepting or rejecting changes.

        A   Insert
        B   Review
        C   References
        D   Mailings   (1)

1.5   The letters a/b/g/n refer to data transmission over a(n) … connection.

        A   ADSL
        B   Wi-Fi
        C   3G
        D   Fibre   (1)

1.6   Which ONE of the following functions will calculate the number of cells in the range A1:A13 that has a value other than 5?

        A   =COUNTIF(A1:A13, "<5")
        B   =COUNTIF(A1:A13, "<>5")
        C   =COUNTIF(A1:A13, ">=5")
        D   =COUNTIF(A1:A13, ">5")   (1)

1.7   Which ONE of the following fields in a database table, which stores records of high school learners, is the most suitable field on which to set a Default Value?

        A   Home Language
        B   Surname
        C   Address
        D   Telephone Number   (1)

1.8   Which CPU in the following list is the best choice for a gaming laptop/desktop?

        A   i5 quad core
        B   i7 quad core
        C   Atom
        D   Celeron   (1)

1.9   If the colour of an image displayed by a projector appears to be overall too light or too dark, it may be corrected by changing the … of the projector.

        A   contrast
        B   brightness
        C   resolution
        D   position   (1)

1.10   Which ONE of the following allows a user to view digitally created visuals in real time overlaid onto a physical environment?

        A   4D
        B   Virtual reality
        C   Cyber Space
        D   Augmented reality   (1)
                                                                            [10]

QUESTION 2: MATCHING COLUMNS

Choose a term/concept from COLUMN B that matches the description in COLUMN A. Write only the letter (A–U) next to the question numbers (2.1–2.10) in the ANSWER BOOK, for example 2.11 W.

COLUMN A		COLUMN B	
2.1	A device used to connect many modern devices, such as smartphones to a computer and also connect devices to a charger	A	Click-jacking
		B	Convergence
2.2	A general term used to describe a class of software that negatively affects your computer	C	Copyright
		D	Crowdfunding
2.3	An instrument used to gather information from people	E	ergonomics
2.4	The process of getting many people to fund a project, typically over the internet	F	Facial recognition
		G	file server
2.5	Unwanted e-mail sent to a large number of users	H	spam
2.6	A standard that allows devices such as smartphones to connect wirelessly if they are in close proximity	I	Malware
		J	Micro USB
2.7	The act of passing off someone else's work as your own	K	NFC
		L	Style
2.8	A biometric security measure that could control access to a user's computer or device	M	Password
2.9	Combined settings that control the layout, fonts and colours of an entire document	N	Plagiarism
		O	Questionnaire
2.10	The increasing trend of combining different functions and technologies in computers and devices	P	RFID
		Q	telecommuting
		R	Theme
		S	UPS
		T	Web hosting
		U	Wi-Fi

(10 x 1)   **[10]**

     Please turn over

QUESTION 3: TRUE/FALSE ITEM

Indicate whether the following statements are TRUE or FALSE. Write 'true' or 'false' next to the question numbers (3.1–3.5) in the ANSWER BOOK. Correct the statement if it is FALSE. Change the underlined word(s) to make the statement TRUE. (You may not simply use the word 'NOT' to change the statement. NO mark will be awarded if only FALSE is written down.)

EXAMPLES:

QUESTION	ANSWER
Windows 10 is the most common operating system installed on new laptops.	True
A NIC has slots for hardware components, such as the CPU.	False – motherboard

3.1   Formatting can be used to automatically arrange specific values in a spreadsheet according to specific criteria. (1)

3.2   Mac OS is a proprietary operating system. (1)

3.3   The Scan Disk Utility will allow a user to delete unwanted files, e.g. temporary files/folders. (1)

3.4   An Alt text tag will increase the websites accessibility for blind users. (1)

3.5   A computer that has been taken over by a hacker is called a pirate. (1)
[5]

TOTAL SECTION A: 25
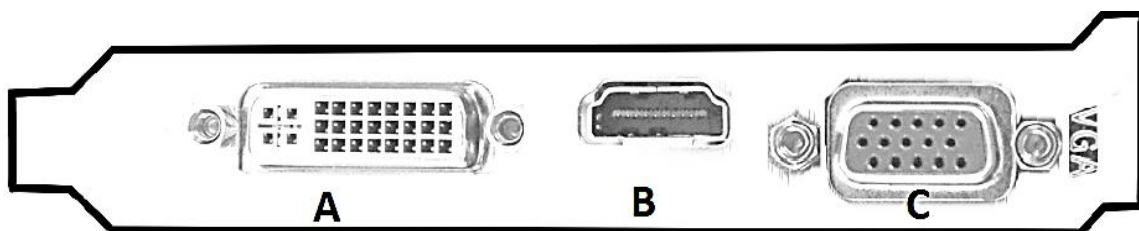
SECTION B

QUESTION 4: SYSTEM TECHNOLOGIES

4.1 Study the advertisement below to answer the questions that follow.

DEVICE A	DEVICE B
DVI, VGA and HDMI output	DVI, VGA and HDMI output
Dual Core i5™ 7360U 3.4 GHz	6 Core Ryzen™5 1600 3.2GHz
Integrated Intel Iris Graphics 6000	AMD Radeon RX 580 4G 256bit DDR5
4GB DDR4-2133Mhz	Graphics Card
3TB WD Blue 7200 RPM Hard Drive	8GB DDR4-2133Mhz
LG Blu-Ray Internal Writer BH16NS40	512GB SSD
(optional)	LG Blu-Ray Internal Writer BH16NS40
Wireless: 802.11ac, Bluetooth 4.0	(optional)
Linux Ubuntu 18.3 64 bit	Wireless: 802.11ac, Bluetooth 4.0
	Linux Mint 18.3 64 bit

4.1.1 Although Device **A** shows a higher processing speed than Device **B**, the seller claims that Device **B** is the 'faster' of the two. Provide TWO reasons why this could be the case. (2)

4.1.2 The operating system on both devices is known as open-source software (OSS). Provide TWO reasons why the seller chose to load this instead of proprietary software. (2)

4.2 There are different ways to connect a monitor to a computer. Study the picture below and answer the questions that follow.

4.2.1 Name port **B**. (1)

4.2.2 State TWO disadvantages of port **C** compared to port **B**. (2)

4.3 The image below appears on a school's newsletter.

    4.3.1 What is this image called? (1)

    4.3.2 Describe how it would be used by referring to a suitable example. (2)

4.4 SSD's are becoming quite popular but hard disk drives are still widely used. Provide TWO reasons why HDD's are still found on many new devices. (2)

4.5 Your school is planning to implement BYOD for use by the learners. Explain what 'BYOD' means, not what the acronym stands for. (2)

4.6 Name ONE advantage and ONE disadvantage of a wireless mouse. (2)

4.7 Your school is considering the purchase of a 3D-printer. Give a brief definition of a 3D-printer and explain how it works. (2)

4.8 Why is it necessary for the school to know which programs they will be using, before buying a computer? (1)

4.9 Suggest TWO methods that could be used to repair a flash drive that has been infected with a virus. (2)

4.10 You will be using a vlog feed to teach students computer literacy.

    4.10.1 State TWO guidelines for creating and maintaining a successful vlog. (2)

    4.10.2 How is <u>streaming</u> a video different from <u>downloading</u> an online video? (1)

    4.10.3 Why is it not a good idea for a user to repeatedly stream a video? (1)

[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

In cloud computing data and applications exist on web servers.

5.1   Give the generic name (abbreviation/acronym) for the type of network that would stretch over a world-wide geographical area.   (1)

5.2   Give TWO advantages of making use of applications on the cloud instead of having the applications on your personal computer.   (2)

5.3   E-mail services such as Hotmail and Gmail are provided as part of cloud computing services.

      5.3.1   Name TWO disadvantages of using a web-based e-mail service rather than a desktop e-mail service.   (2)

      5.3.2   Name ONE advantage of using a threaded discussion as a feature of an e-mail service.   (1)

5.4   Name the TWO biggest concerns in using cloud computing.   (2)

5.5   Briefly discuss the function of each of the following in a network:

      5.5.1   Switch   (2)

      5.5.2   Server   (2)

5.6   VoIP telephone calls are becoming more and more popular.

      5.6.1   Explain what VoIP is (do not just expand the abbreviation).   (2)

      5.6.2   Name ONE possible advantage of using VoIP instead of a landline telephone.   (1)

[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1 Mention ONE way of conducting a survey, other than a pen-and-paper or online version. (1)

6.2 Give TWO reasons why one should verify the quality of information before using it, other than the danger of it being fake news? (2)

6.3 Learners had to come up with questions for the PAT. One of those were:
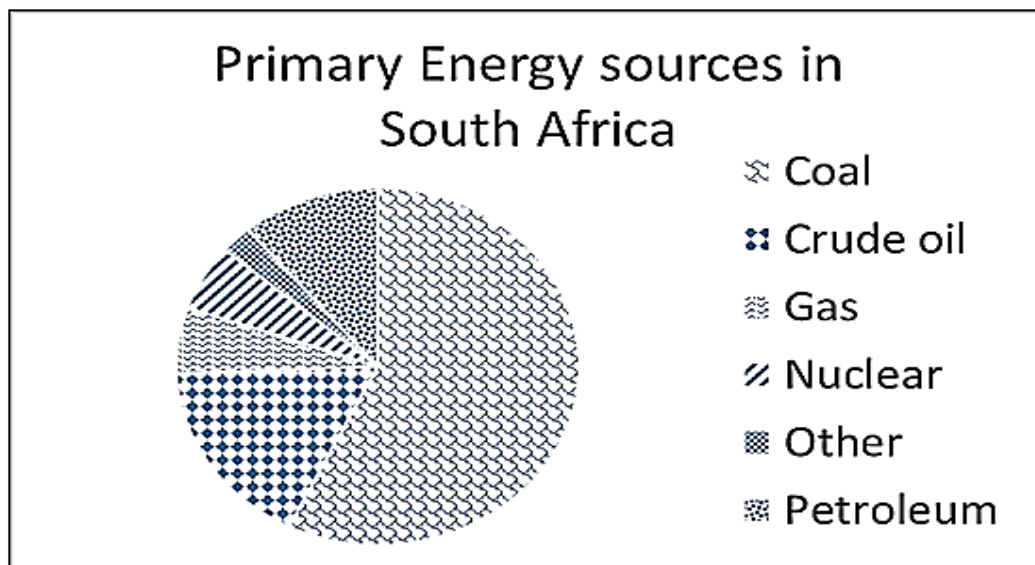*"What do you think about big data?"*

Why would the **data** that will be collected from this question be difficult to work with? (1)

6.4 The table below shows typical examples of website URLs.

1. www.peta**.org**	2. www.sterkinekor**.mobi**	3. www.open**.ac.za**

What more can you tell about these websites, simply from looking at the underlined parts of the URL? (3)

6.5 Study the graph below and answer the questions that follow.

6.5.1 Why is a pie graph better than a column graph to use for this specific data? (1)

6.5.2 Based on the graph above, what is the fourth most common energy source in South Africa? (1)

6.5.3 Suggest an improvement that could be made to this graph/chart to make it easier to interpret? (1)

[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1   Computers on any network can be open to ransomware attacks.

       7.1.1   What is a *ransomware attack*?   (2)

       7.1.2   What is the only guaranteed way to safeguard your data against ransomware attacks?   (1)

7.2   There have been increasing reports of botnets being used for DDoS-attacks. Explain what a botnet is **and** how it would be used to perform such an attack.   (3)

7.3   Describe TWO settings that you can make on Facebook to protect your profile and to keep it private.   (2)

7.4   State TWO ways in which a person can manage information overload more efficiently.   (2)

                                                                [10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1   You asked two of your friends to read your PAT assignment and to make suggestions and alterations.

         8.1.1   Describe TWO facilities in Word-processing that will allow them to share and work on this assignment electronically without deleting each other's work.   (2)

         8.1.2   Explain what you understand by the term, *accessibility of a document.*   (1)

8.2   Examine the following screenshot as part of a paragraph in a Word-processing document:

         8.2.1   Name the type of indent that was used on the left side of the paragraph.   (1)

         8.2.2   Identify any ONE formatting feature that could be changed in order to make the paragraph more readable, besides any alignment or justification options.   (1)

8.3   The following field names were used in a database table to store the records of athletes in a certain sports team:

Field Name	Data Type
Surname	Short Text
Date_Of_Birth	Number
Age	Number
SportType	Short Text

         8.3.1   Suggest a better alternative as data type for the Date_of_Birth field.   (1)

         8.3.2   Surname is a text field with a default field size of 255, which is too large, and should be reduced.

                 Clarify why one generally needs to be careful when reducing the size of a text field in a database table.   (1)

8.3.3　In a query of this database the following criteria appears in the Surname field: "Like Mo*" Give the term given to characters like the star ('*') in this query.　(1)
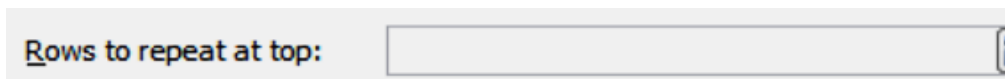
8.4　Study the following extract of an employer's Excel worksheet, which was designed to calculate the number of hours worked by certain staff members:

D2	⋮	✕	✓	ƒx	=(C2-B2)*24	
	A		B	C	D	

	Name	Time From	Time To	Hours Worked
2	Khumalo, K	08:00	12:00	00:00
3	Ndlovu, B	08:30	12:15	18:00
4	Reddy, R	08:15	13:00	18:00
5	Swanepoel, M	09:00	11:30	12:00

8.4.1　The correct formula was used in column D to work out the number of hours worked, but the result is not being displayed correctly.

Explain what needs to be done to correctly display the number of hours worked. (Note that, in your answer, it is NOT necessary to describe the menu options or actual mouse clicks required.)　(1)

8.4.2　The extract shown above is part of a much longer worksheet. When the user scrolls down the list of names, the headings in row 1 eventually 'disappear' off the top of the worksheet.

Give the name of the spreadsheet feature that can be used to prevent the heading row/s from scrolling out of view.　(1)

8.4.3　In making a printout of the worksheet, the employer decided to use the following option, which appeared in a dialog box:

Rows to repeat at top: [　　　　　　　　　　　　　]

Briefly explain why the employer decided to use the option 'Rows to repeat at top' in making the hard copy.　(1)

8.5　Examine this piece of HTML code, which is used to place the image Trophy.jpg on a web page:
<img alt = "Winner" src = "Trophy.jpg" width = "100" height = "75">

8.5.1　Give TWO reasons for including the width and height attributes in the image tag.　(2)

8.5.2　Give the unit in which the width and the height attributes are specified.　(1)

8.5.3　State ONE reason why one would include an alt attribute in the image tag.　(1)

[15]

TOTAL SECTION B:　75

SECTION C

QUESTION 9: INTEGRATED SCENARIO

> Your uncle is a coordinator teaching computer literacy to the youth in your community. He needs your help with some computer related issues since you did CAT in Grade 12 last year.

9.1   Your uncle has to publish a monthly newsletter about the activities in the project. The newsletter is usually 30 MB large as it contains images of the project activities and cannot be sent via e-mail as an attachment.

       Suggest TWO ways of solving the problem of distributing the newsletter electronically.   (2)

9.2   In the running of the project your uncle will need Internet access.

       9.2.1   He wants to use a proxy server for Internet access in the network.

             State TWO benefits of using a proxy server, other than simply providing internet access.   (2)

       9.2.2   The school premises is having trouble picking up the Wi-Fi signal in all areas.

             Suggest ONE device they could use for a more even Wi-Fi distribution across the school premises.   (2)

9.3   Data kept on the office computers is very important and needs to be secured.

       State TWO ways in which your uncle can back-up the data so that it is stored in another location.   (2)

9.4   The ICT centre manager was warned against the risks of trying out the beta version software on the computers in the ICT centre.

       Briefly explain the aim of beta software and why he should be careful of using the beta version software.   (2)

9.5   One of the programme participants commented that 'Windows 10 has no option to turn off automatic system updates.

       9.5.1   Give TWO reasons for a software developer to release updates.   (2)

       9.5.2   Why would software developers NOT give the user a choice to disable automatic updates?   (1)

       9.5.3   State TWO potential disadvantages of not being able to disable automatic updates.   (2)

9.6   Name TWO input or output devices that could be make computers accessible to the visually impaired users of the programme.   (2)

9.7   There are many templates available for download. The formal monthly report that your uncle needs to submit to the project funders must be based on a template.

        Explain what a *template* is.   (2)

9.8   The records of the programme participants will be imported from a spreadsheet file to a database file.

        9.8.1   What is the general purpose of an import function?   (1)

        9.8.2   A wizard is used to help a user through the import process. Briefly explain what a wizard is in this context.   (2)

9.9   A database table was created to store information of the various members of the youth programme.

        The table below has the information:

Field Name	Data Type	Description (Optional)
Name	Short Text	Name of participant
Surname	Short Text	Surname of participant
DOB	Date/Time	Date of birth
Address	Short Text	Home address of participant
DateStarted	Date/Time	Date the participant joined the youth programe
Amount	Currency	Amount paid by the participant

        9.9.1   Why is the DOB field not suitable to use as a primary key?   (1)

        9.9.2   Which database feature can be used to ensure that a user cannot leave the Name and Surname fields blank?   (1)

        9.9.3   A form was created for participants to enter their information. Why would it be better to use a Date Picker for the DateStarted field, rather than letting participants simply typing it in?   (1)

        [25]

QUESTION 10: INTEGRATED SCENARIO

10.1   Read the extract below and answer the questions that follow.

WITH SMART CITIES, YOUR EVERY STEP WILL BE RECORDED
by Sara Degli-Esposti and Siraj Ahmed Shaikh | 17 April 2018

Modern cities are brimming with objects that receive, collect and transmit data. This includes mobile phones but also objects actually embedded into our cities, such as traffic lights and air pollution stations. Even something as simple as a garbage bin can now be connected to the internet, meaning that it forms part of what is called the internet of things (IoT). A smart city collects the data from these digital objects and uses it to create new products and services that make cities more liveable.

Although they have huge potential to make life better, the possibility of increasingly smarter cities also raises serious privacy concerns. Through sensors embedded into our cities, and the smartphones in our pockets, smart cities will have the power to constantly identify where people are, who they are meeting and even perhaps what they are doing.

Following revelations that 87 million people's Facebook data was allegedly breached and used to influence electoral voting behaviour, it is ever more important to properly scrutinise where our data goes and how it is used. Similarly, as more and more critical infrastructure falls victim to cyber-attacks, we need to consider that our cities are not only becoming smarter, they are also becoming more vulnerable to cyber-attacks.

[Extract from https://theconversation.com/with-smart-cities-your-every-step-will-be-recorded-94527]

10.1.1   What does the term Internet of Things (IoT) refer to?   (2)

10.1.2   Refer to paragraph 1. Many examples of IoT are given that could improve 'liveability' in a city. Elaborate on any TWO of these examples (or give your own) by describing how they would improve citizens' lives.   (2)

10.1.3   How does the Internet of Things and Big Data relate to each other?   (2)

10.1.4   Discuss TWO challenges a city would face when trying to implement the systems necessary to create *smart cities*, besides the challenge of funding such a project?   (2)

10.1.5   Many citizens of such smart cities say that privacy concerns are only relevant to people who have something to hide. Do you agree or disagree with this statement? Motivate your answer.   (2)

10.1.6   Describe a scenario of the type of cyber-attack that could be launched on a smart city.   (1)

10.2 | Your city sets up an employment centre to assist the unemployed people in your area to find jobs. The first thing they do, is create an electronic filing system with everyone's information as well as taking profile pictures for each person's CV.

     10.2.1   State TWO benefits of a paperless office.   (2)

     10.2.2   What type of scanner would you recommend for their office since they will be doing so much scanning?   (1)

     10.2.3   Why is it possible to use certain printers for scanning?   (1)

     10.2.4   How can jobseekers get regular updates about vacancies without having to visit the website?   (1)

     10.2.5   Give TWO e-mail netiquette guidelines to use when sending CV's to companies.   (2)

     10.2.6   What word processing feature can be used to create multiple personalised letters to all the companies where people apply?   (1)

     10.2.7   What camera specification can affect the quality of the pictures?   (1)

     10.2.8   What type of internal storage media do most cameras use?   (1)

10.3   The city's traffic offices would like to prevent traffic offenders from sharing information about speed traps and roadblocks on social media.

     10.3.1   State TWO ways in which traffic offenders can determine and share the location of a mobile speed camera after passing it.   (2)

     10.3.2   State TWO ways in which people try to hide social media posts from the authorities.   (2)

     [25]

TOTAL SECTION C: **75**
GRANDTOTAL: **150**