Province of the
EASTERN CAPE
EDUCATION

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NATIONAL
SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2024

COMPUTER APPLICATIONS TECHNOLOGY P2

MARKS: 150

TIME: 3 hours

This question paper consists of 15 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.   Unless otherwise specified, answers such as 'cheaper', 'slower/faster', etc. will NOT be accepted.

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   Which ONE of the following application software would be the most suitable for creating a library management system?

    A   Word processor
    B   Presentation software
    C   Spreadsheet
    D   Database   (1)

1.2   The URL of a website refers to …

    A   the relative ranking of the website by a search engine.
    B   the password needed to access the website.
    C   the e-mail address of the webmaster of the website.
    D   an address that identifies a website on the internet.   (1)

1.3   Which ONE of the following hardware components will probably improve the performance of a PC the most?

    A   Monitor
    B   DVD drive
    C   RAM
    D   Graphics card   (1)

1.4   Safe mode is …

    A   used to prevent unauthorised users from gaining access to confidential files.
    B   the mode the computer is set to after a full virus scan.
    C   a method of loading an operating system with basic drivers and settings.
    D   activated when you press Ctrl+Alt+Delete.   (1)

1.5   While viewing a page on Facebook, you were asked to install an add-on. Which ONE of the following refers to the function of an add-on in this context?

    An add-on …

    A   adds more support and functions for multimedia effects on the page.
    B   creates a new virtual port to plug in a flash drive.
    C   automatically upgrades the drivers for your graphics card.
    D   enables the plug-and-play capabilities of your operating system.   (1)

1.6   A component that forms an integral part of the motherboard.

        A   DVD ROM
        B   DIMM slots
        C   USB drivers
        D   HDD   (1)

1.7   ... is a wild card character that can be used when searching for a file using an operating system utility.

        A   %
        B   #
        C   *
        D $ (1)

1.8   This is a work arrangement where employees work away from their offices and communicate with the office via the Internet.

        A   Telecommuting
        B   Green computing
        C   Groupware computing
        D   Virtual computing   (1)

1.9   … may NOT be used as a data source in a mail merge.

        A   A worksheet in a spreadsheet
        B   A report in a database
        C   A table in a word processing document
        D   A query in a database   (1)

1.10   The ... application would be the most suitable for viewing a YouTube video.

        A   Media Player
        B   MP3 player
        C   Paint
        D   Sound Recorder   (1)
                                                                                [10]

QUESTION 2: MATCHING ITEMS

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

COLUMN A	COLUMN B
2.1 A feature of a word processing program that can be used to show amendments to a document made by an editor or a reviewer	A Template
	B Macro
2.2 A document that contains a specific layout and formatting necessary to create other similar documents	C Firewire
	D Pharming
2.3 A system used to monitor and control access to and from the Internet on a computer	E Operating system
	F Phishing
2.4 A program that can be used to set a backup program to run every night at midnight	G GIGO
	H Timer
2.5 A program that manages and controls all the activities in a computer	I Convergence
2.6 A device that can be used as a temporary source of power for computers if there is a power failure	J Show/Hide
	K Track changes
2.7 The small pictures on the desktop which represent programs or places on the computer	L GUI
2.8 Incorrect input or invalid data into a computer system that will produce incorrect or meaningless results	M Spooler
	N Firewall
2.9 A trend where different technological systems and other functions or systems are combined into one computer or computing device	O E-waste
	P Icons
2.10 Attempts to trick users into giving out confidential data, such as passwords	Q Theme
	R UPS
	S Scheduler
	T CPU

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

QUESTION 3: TRUE/FALSE ITEMS

Indicate whether the following statements are TRUE or FALSE. Write 'true' or 'false' next to the question numbers (3.1 to 3.5) in the ANSWER BOOK. If the statement is true, write 'TRUE'. If the statement is false, write 'FALSE' and change the underlined word(s) to make the statement TRUE. (Do NOT simply use the word "NOT" to change the statement.)

NO mark will be awarded if FALSE is written without a correct answer.

EXAMPLES:

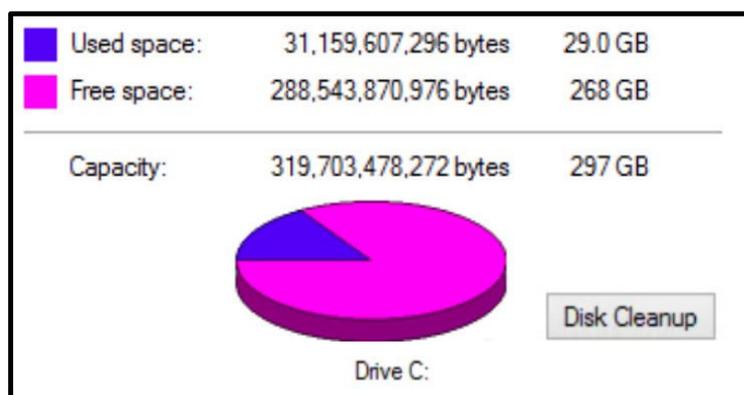| QUESTION	ANSWER
A keyboard is an <u>input</u> device.	True
<u>Social engineering</u> is the study of the design of equipment for the comfort and the safety of people in a work environment.	False, Ergonomics

3.1 Companies often release the <u>shareware</u> versions of their software for testing purposes before the software is released for sale.

3.2 <u>Section breaks</u> make it possible to have different page orientations within the same word processing document.

3.3 <u>Grid computing</u> refers to the sharing of resources such as programs and data storage offered as a service over the Internet.

3.4 The <u>snipping tool</u> is a software that allows the user to capture or copy a section of what appears on the screen.

3.5 The spreadsheet functions LEFT and RIGHT can be replaced by the <u>CONCATENATE</u> function to get the same result. **[5]**

TOTAL SECTION A: 25

SECTION B

QUESTION 4: SYSTEM TECHNOLOGIES

4.1   The principal established an ICT committee to buy new computers for the school's new ICT centre.

    4.1.1   Give ONE motivation why the committee should buy wireless devices for the new ICT centre. (1)

    4.1.2   Give TWO troubleshooting steps you can take to try and get a wireless (Bluetooth) keyboard that has suddenly stopped working to work again. (2)

4.2   The new ICT centre should be equipped with printers and a scanner.

    4.2.1   Recommend a type of printer that will be suitable for high volumes of printing. (1)

    4.2.2   3D printers have become very popular in the world of design and production.

        Describe the function of a 3D printer and explain how it works. (2)

    4.2.3   Discuss TWO advantages of buying a scanner to use in the new ICT centre. (2)

4.3   For a computer to function properly, it needs an operating system as well as an application software.

    4.3.1   Most operating systems need to be updated from time to time.

        State TWO possible advantages of such updates. (2)

    4.3.2   Discuss TWO software related problems that could reduce the processing speed of a computer. (2)

4.4   The committee must consider ways in which physically challenged learners can access the computers in the ICT centre.

    4.4.1   Name ONE hardware device to assist the visually impaired (blind) learners in the ICT centre. (1)

    4.4.2   Explain how a speech recognition program may be used to assist learners who are physically challenged. (1)

4.5   Explain the difference between *a site license* and *a creative commons license*. (2)

4.6   The committee wishes to buy a digital camera for the new ICT centre. In an advertisement, they saw that the resolution of the camera was incorrectly listed as 12 *dpi*.

    4.6.1   Name the correct unit to measure the resolution of images taken with a digital camera.   (1)

    4.6.2   Give an example of where *dpi* is used as a specification.   (1)

    4.6.3   What effect does low resolution have on a digital image?   (1)

4.7   The principal has an older computer at home. He opened the disk properties and the window below appeared.

■	Used space:	31,159,607,296 bytes	29.0 GB
■	Free space:	288,543,870,976 bytes	268 GB
	Capacity:	319,703,478,272 bytes	297 GB

Disk Cleanup

Drive C:

    4.7.1   What does the window above show you about the state of the hard drive?   (1)

    4.7.2   How would the amount of storage space available be affected if the principal performed a disk defragmentation on this hard drive?

         Motivate your answer.   (2)

    4.7.3   Other than using the Disk Cleanup utility and performing a disk defragmentation, give THREE tips to the principal in order for him to keep his computer in a good running order.   (3)
          [25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1   The community centre will provide facilities for people to play LAN games.

    5.1.1   Explain what LAN games are.   (1)

    5.1.2   What is the difference between *online gaming* and *LAN gaming*?   (2)

5.2   The people who will use the community centre have asked the committee to provide internet access.

    5.2.1   Name the type of software they would need to read pages from the Internet. Do NOT give brand names.   (1)

    5.2.2   Discuss THREE issues to consider when deciding on an ISP.   (3)

    5.2.3   Other than cost, state TWO advantages of a broadband connection.   (2)

5.3   The principal heard that some websites offer live streaming.

    Briefly explain what *live streaming* means.   (1)

5.4   What is the purpose of the digital certificate found on some websites?   (1)

5.5   When you use the internet, the web server stores small files known as cookies on a computer.

    Give TWO reasons why e-commerce and other web applications use cookies.   (2)

5.6   The principal visited a website and a pop-up window appeared telling him that he had won a new iPad.

    Explain how he could stop this from happening again.   (1)

5.7   Give the term used to outline the rules and restricts the ways in which the community centre may be used.   (1)

                                                           [15]

QUESTION 6: INFORMATION MANAGEMENT

6.1   Information management is important especially when learners conduct online research. With reference to URL shortening:

    6.1.1   Explain what a URL shortening service does.   (1)

    6.1.2   Motivate how a user can benefit from the use of a URL shortening service.   (2)

6.2   Mention TWO criteria that you would use when evaluating information in a website.   (2)

6.3   State TWO general features of a spreadsheet program that make it suitable for data analysis.   (2)

6.4   Explain why it is necessary to add a bibliography at the end of a formal document/report.   (1)

6.5   Explain the difference between *a citation* and *a caption*.   (2)
[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1   Big data is very large structured and unstructured data sets that are analysed using computers to reveal trends and patterns especially relating to human behaviour and interaction.

    7.1.1   Discuss TWO skills required by people who wish to follow a career in big data analysis.   (2)

    7.1.2   Briefly explain the term *crowd funding*.   (2)

7.2   When you buy and/or install new software, there is an agreement to be accepted.

    Explain the purpose of the EULA agreement.   (2)

7.3   Briefly explain what *geotagging* is.   (2)

7.4   Explain by means of an example how the Internet of Things *(IoT)* can be used in a smart home.   (2)
[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1   Explain the purpose of the Accessibility Checker.   (2)

8.2   You set up a database of all the books in the library. The **Book_Table** contains the fields below.

Field name	Description
Barcode number	Bar code number to identify each book
Author	Author's name
Title	Title of the book
Year	Year published
Fiction	Fiction or non-fiction
No_of_Copies	Number of copies in stock

8.2.1   Name the field that is the most appropriate to use as the primary key **and** state why you have chosen this field.   (2)

8.2.2   State the most appropriate data type (besides text) for the **Fiction** field that indicates whether the book is fiction or not.   (1)

8.2.3   State the most appropriate data type for the **No_of_Copies** field.   (1)

8.2.4   Which feature of a database report would you use to generate a list to separate the fiction from the non-fiction books?   (1)

8.2.5   Which feature of a word processing program would you use to generate personalised letters to send to each learner with outstanding books?   (1)

8.3   Which feature of a spreadsheet would you use to copy a function down to cells below without using the "copy and paste" method?   (1)

8.4   Study the spreadsheet screenshot below and answer the questions that follow.

	A	B	C	D	E	F	G	H
	Supplier code	Equipment	Item Price		Department	Equipment needed	Units	Total Cost
1								
2	FGHD	Mouse	R129,990		CAT	Keyboard	30	#N/A
3	JKD	Keyboard	R295,360		IT	Keyboard	12	#N/A
4	PL	500 GB SSD	R999,990		Accounting	3 in 1 Printer	1	#N/A
5	WUJD	3 in 1 Printer	########		Library	Keyboard	5	#N/A
6					Mathematics	500 GB SSD	2	#N/A
7					EGD	3 in 1 Printer	3	#N/A
8					Admin	500 GB SSD	1	#N/A

8.4.1   Explain what is the cause of the error found in **cell C5** and explain how to correct this error. (2)

8.4.2   A VLOOKUP function was used in **cell H2** to calculate the total cost of equipment per department. The following formula found in **cell H2** is copied down to **cell H8:**

=VLOOKUP(F2;$A$1:$C$5;3;FALSE)*G2

Correct the function OR explain why the function does not work. (2)

8.5   Give TWO possible reasons for hyperlinks not working on a saved HTML page. (2)

[15]

TOTAL SECTION B: 75

SECTION C

QUESTION 9: INTEGRATED SCENARIO

Bitcoin miners receive Bitcoin as a reward for creating new "blocks" which are added to the blockchain. The school plans on investing in cryptocurrency (digital currency).

9.1   Study the advertisement below and answer the questions that follow:

ALTCOIN MINING RIGS – R69 999,00

✓ Motherboard (6 card support)
✓ Intel G3900 @ 3,15 Ghz
✓ 16 GB RAM
✓ Kingston 240 GB A400 SSD
✓ 6 x NVIDIA 8 GB 1070 GPU
✓ 6 x powered riser
✓ 1 x mining rig frame
✓ 1600 Watt PSU
✓ Includes motherboard assembly, SSD installation and a free 18" full HD screen

9.1.1   What kind of computer user will most likely use a computer with these specifications?   (1)

9.1.2   Name the manufacturer of the graphics processor.   (1)

9.1.3   How is the size of monitors normally measured? Give the name of the unit in which the size is measured.   (2)

9.1.4   Mining rigs (computer systems) are used to mine bitcoins by completing complex mathematical processes.

Briefly explain what a *bitcoin* is.   (2)

9.1.5   Discuss TWO limitations of bitcoin.   (2)

9.1.6   Discuss THREE advantages of using a solid state drive (SSD).   (3)

9.1.7   Explain the function of a power supply unit (PSU).   (2)

9.2   The school decided to use a chatbot to deal with enquiries from parents and to communicate with parents in the chat function on their website.

9.2.1   A chatbot is a form of artificial intelligence (AI).

Define *artificial intelligence* (*AI*).   (2)

9.2.2   State ONE advantage of using a chatbot to deal with user enquiries in this scenario.   (1)

9.2.3   Give TWO reasons why it would be more appropriate to use a real person rather than a chatbot to handle user chats.   (2)

9.3   There are some concerns with the Internet connection at the school as well as about malware.

9.3.1   Briefly explain what *pharming* is.   (2)

9.3.2   Briefly explain the term *e-mail spoofing* and state who typically uses spoofing.   (2)

9.3.3   List THREE social consequences of malware.   (3)

[25]

QUESTION 10: INTEGRATED SCENARIO

10.1   Digital communication is very much part of an e-learning initiative.

        10.1.1   List TWO limitations or weaknesses of digital communications.   (2)

        10.1.2   Give TWO good practices that you should follow when using digital communications.   (2)

10.2   Differentiate between *e-learning* and *m-learning*.   (2)

10.3   Ergonomics needs to be considered when using computing devices.

        10.3.1   Briefly explain the term *ergonomics*.   (2)

        10.3.2   Why is it advisable to buy an ergonomically designed keyboard and mouse?   (1)

10.4   There is a growing trend in using augmented reality (AR) technology when learning.

        Explain what *augmented reality* (AR) is by giving a relevant learning example.   (1)

10.5   More and more people are suffering from information overload.

        10.5.1   Briefly explain what *information overload* is.   (2)

        10.5.2   Besides learning to read, more quickly and accurately, give THREE strategies that can help you to prevent becoming a victim of information overload.   (3)

10.6   Briefly explain the difference between *a driver* and *firmware*.   (2)

10.7   In a document the author has used the Enter key repeatedly to move headings to the top of each page.

        10.7.1   Why is this not a good choice to move the headings in this way?   (1)

        10.7.2   Propose a way to do this correctly.   (1)

10.8   Explain what each of the following error messages in a spreadsheet would indicate and outline the solution to each.

        10.8.1   #VALUE!   (2)

        10.8.2   #DIV/0!   (2)

10.9   Explain when you will make use of absolute cell referencing in a spreadsheet.   (2)

        [25]

TOTAL SECTION C: 50
GRAND TOTAL: 150