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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

NOVEMBER 2023

MARKS: 150

TIME: 3 hours

This question paper consists of 15 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of:

SECTION A (25)
SECTION B (75)
SECTION C (50)
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 subquestion.
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 answers than the question requires as it 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, e.g. 1.11 D.

- 1.1 Which ONE of the following can be considered a strong password?
- A qwerty1234
 - B Sunshine
 - C Spr!ng+w@t3r
 - D Password
- (1)
- 1.2 You need to backup an entire hard drive. Which of the following devices is best suited for this purpose?
- A Portable hard drive
 - B Flash disk
 - C DVD
 - D Cloud storage
- (1)
- 1.3 A ... component is unlikely to be found in a new computer.
- A motherboard
 - B solid state drive
 - C processor
 - D DVD-writer
- (1)
- 1.4 A ... is NOT an example of a peripheral.
- A printer
 - B motherboard
 - C keyboard
 - D monitor
- (1)
- 1.5 The URL of a website refers to ...
- A a way for users to identify a website on the internet.
 - B the relative ranking of the website by a search engine.
 - C the password needed to access the website.
 - D the e-mail address of the webmaster of the website.
- (1)
- 1.6 If you think the web page you are viewing is outdated (old), you can ...
- A change to a different ISP.
 - B update your antivirus software.
 - C change to a 4G connection.
 - D refresh the page.
- (1)

- 1.7 Which upgrade will most likely improve the performance of a PC?
- A Adding more memory (RAM)
 - B Increasing the refresh rate of the monitor
 - C Adding a second hard drive
 - D Installing a video capture card
- (1)
- 1.8 ... refers to the use of resource material without acknowledgement.
- A Data theft
 - B Plagiarism
 - C Identity theft
 - D Data cloning
- (1)
- 1.9 Which ONE of the following should NOT be used as a data source?
- A A spreadsheet worksheet
 - B A database report
 - C A word processing document
 - D A Notepad⁺⁺ text file
- (1)
- 1.10 For which ONE of the following fields in a database will you most likely use an input mask?
- A The cellphone number of a client
 - B The surname of a client
 - C The number of items ordered by the client
 - D The web address of a client's company
- (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, e.g. 2.11 U.

COLUMN A		COLUMN B	
2.1	High-speed internet connection, which is referred to as 'always on'	A	switch
2.2	A collection of instructions that enables a computer to perform specific tasks	B	web page
2.3	Used to connect multiple devices within a LAN	C	broadband
2.4	A preventative action to protect your work from piracy	D	fraud
2.5	Used to encrypt and secure your internet traffic	E	AI
2.6	Machines that can perform tasks (autonomously) that would normally require human action	F	firewall
2.7	Setting the space between the content of a cell and its border in an HTML table	G	VPN
2.8	Used to fix a specific programming problem in software	H	software
2.9	The electronic record of a person's online activity	I	bandwidth
2.10	A single HTML file on the internet	J	patch
		K	cell spacing
		L	blockchain
		M	AR
		N	copyright
		O	digital footprint
		P	website
		Q	Bluetooth
		R	service pack
		S	cell padding
		T	hub

(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
The initial start-up instructions are stored in the <u>ROM</u> .	True
An <u>NIC</u> has slots for hardware components, such as the CPU.	False, motherboard

- 3.1 A hub allows a computer to send and receive data via a telephone line. (1)
- 3.2 ISP is a company that provides a service, such as web page hosting. (1)
- 3.3 The data label is a visual indicator on a graph of related sets of values in an Excel worksheet/spreadsheet. (1)
- 3.4 Green computing is the study of the impact of technology on users. (1)
- 3.5 In word processing, auto numbering can also start when you type a number with a full stop, then a space, followed by text. (1)
- [5]**

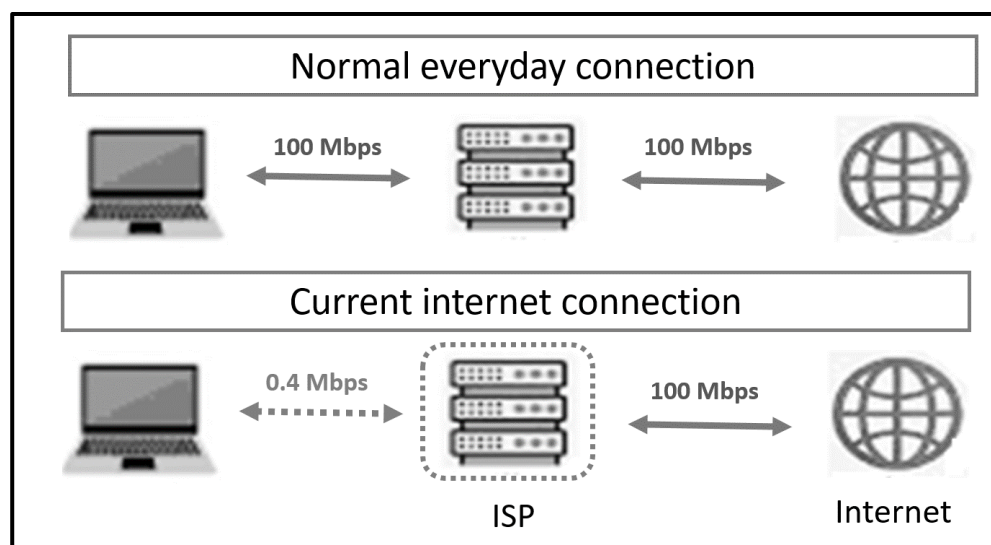
TOTAL SECTION A: 25

SECTION B**QUESTION 4: SYSTEMS TECHNOLOGIES**

- 4.1 Give ONE example of a device that can be classified as an input device and output device. (1)
- 4.2 Describe TWO ways in which communication in an information cycle takes place. (2)
- 4.3 Data and information are crucial elements in an ICT system.
- 4.3.1 Describe what is meant by *data* and give an example. (3)
- 4.3.2 Describe TWO processes that will transform data into information. (2)
- 4.4 Describe TWO ways how you could determine if your computer has been infected by malware. (2)
- 4.5 State TWO ways in which spooling can be utilised in a network printer. (2)
- 4.6 Give TWO disadvantages of frequently defragmenting a hard drive. (2)
- 4.7 Briefly explain the purpose of a user interface (UI) and give an example of an input device commonly used with a user interface. (2)
- 4.8 The new monitor you connected to your computing device displays a resolution error message.
- Where would you change the resolution to resolve/fix this error message? (1)
- 4.9 Give TWO disadvantages of convergence. (2)
- 4.10 Give TWO reasons why a company would choose to use grid computing. (2)
- 4.11 State TWO limitations of firewalls. (2)
- 4.12 Give TWO possible solutions to resolve restrictions (bottlenecks) in data flow that appear in local storage areas. (2)
- [25]**

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

- 5.1 Give TWO reasons why you would choose a wireless network for a home or a small business. (2)
- 5.2 State TWO good guidelines/hints for users using video conferencing. (2)
- 5.3 What is the function of an NIC? (1)
- 5.4 Name any TWO technologies that form part of the Fourth Industrial Revolution (4IR). (2)
- 5.5 Give TWO advantages of cloud computing in terms of storage. (2)
- 5.6 State TWO factors to consider when installing wireless access points in a network. (2)
- 5.7 Give TWO disadvantages of using a PAN. (2)
- 5.8 Analyse the picture below and give the term and description for the process. (2)



(2)
[15]

QUESTION 6: INFORMATION MANAGEMENT

- 6.1 What is the importance of report writing in the PAT? (1)
- 6.2 Give TWO considerations when formulating a task definition. (2)
- 6.3 A learner wants to show how the number of e-book readers have increased/decreased over a period of time using a chart.
- What spreadsheet feature can be used to show this on the chart? (1)
- 6.4 State TWO aspects to consider when planning a questionnaire. (2)
- 6.5 Evaluation of the contents of a website is essential in research.
- 6.5.1 Briefly explain why evaluation is essential. (2)
- 6.5.2 State TWO criteria used for evaluating websites. (2)
- [10]**

QUESTION 7: SOCIAL IMPLICATIONS

- 7.1 Briefly describe the positive impact of ICT on the global community. (2)
- 7.2 Name TWO common internet attacks, other than malware. (2)
- 7.3 Briefly describe what data protection is AND give ONE method to protect data/information, excluding any physical methods. (2)
- 7.4 What are the responsibilities of a network administrator to ensure network security? (2)
- 7.5 State TWO ways how a company can prevent data loss when unscheduled power failures occur. (2)
- [10]**

QUESTION 8: SOLUTION DEVELOPMENT

- 8.1 Discuss TWO reasons why you would use page headers and page footers in a document AND give an example of the type of information that can be included in a header or a footer. (3)
- 8.2 Your friend generated a spreadsheet for stationery items sold to a customer. However, the total for all the stationery items displays zero as an answer.

Study the screenshot below and give TWO reasons why the function returns a zero.

	A	B	C
1			
2			
3			
4			
5			
6		Items	Prices
7		Staplers	R 704,00
8		Erasers	R 217,00
9		Pens	R 250,00
10		Drawing pins	R 156,00
11		Paper clips	R 66,00
12		Rubber stamps	R 490,00
13		Highlighters	R 178,00
14		TOTAL	=SUM(B7:B13)
15			

- 8.3 Microsoft Access provides field property settings such as validation rules to improve the accuracy of data capturing. (2)
- Name TWO other additional field properties that can be used. (2)
- 8.4 Name a word processing feature which will force certain text to move to the beginning of the next column. (1)
- 8.5 Briefly explain the criteria of the following validation rule: (2)

<0 or >=5

- 8.6 The following criteria appears for the *Username* field in a database query:

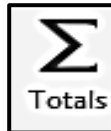
Like "??an*"

Explain the output of this query. (3)

- 8.7 Examine the piece of HTML code below, which is used to insert the image on the web page:

What effect will the missing height attribute have on the image? (1)

- 8.8 Give ONE reason why you would use the button in the image below in an Access database table.



(1)
[15]

TOTAL SECTION B: 75

SECTION C**QUESTION 9: INTEGRATED SCENARIO**

The management of the community hall decided to open a gaming room. The gaming room will include access to board games and video games.

- 9.1 The management needs to purchase PCs for the gaming room and are considering PCs with the specifications below.

COMPUTER SPECIFICATIONS	
AMD Ryzen 7 5700X 8-Core 3.4 GHz (up to 4.6 GHz)	
MSI GeForce RTX 3070 graphics card	
MSI x570 chipset AM4 ATX motherboard	
32 GB DDR4 3 600 MHz gaming memory	
1 TB Gen4 NVMe SSD	
Corsair Airflow 5000D ATX gaming chassis	
Microsoft Windows 11	
NOD32 antivirus	
Office 365	
Microsoft mouse and keyboard	
Including steering wheel/joystick	

- 9.1.1 What kind of computer user will most likely use a computer with these specifications? (1)
- 9.1.2 How is the size of monitors normally measured? (1)
- 9.1.3 Name TWO types of utility software that can be used on this computer. (2)
- 9.1.4 Suggest TWO additional hardware devices that can be bought for this computer. (2)
- 9.2 A small network needs to be created with ten computers in the gaming room.
- 9.2.1 What type of cabled media will most likely be used to connect the computers? Motivate your answer. (2)
- 9.2.2 Give ONE reason why this network would NOT require a server. (1)
- 9.2.3 A printer will be added for administration purposes.
- State TWO factors that should be considered when buying a printer. (2)

- 9.3 The new computers must be secured and protected.
- 9.3.1 Name TWO physical safeguards to protect the computers. (2)
- 9.3.2 What technology can the management add to all devices/equipment to ensure easy tracking/monitoring of devices/equipment? (1)
- 9.4 The secure storage area is protected by a lock which opens by scanning a fingerprint.
- Briefly explain what this type of security is called and give ONE disadvantage. (2)
- 9.5 Virtual reality games are very popular among the community members.
- 9.5.1 Briefly explain what *virtual reality* is. (2)
- 9.5.2 Give TWO disadvantages or limitations of virtual reality. (2)
- 9.6 The management of the community hall decided to host a gaming tournament.
- 9.6.1 Special gaming chairs were bought for the tournament.
- Give ONE feature that a gaming chair should have. (1)
- 9.6.2 Give TWO examples of how ICT can be used to advertise the tournament. (2)
- 9.6.3 What Microsoft Office application is best suited to capture and store the individual entries for the tournament? (1)
- 9.6.4 The management wants to send a standard letter to all tournament participants to thank them.
- What word processing feature can be used to quickly generate a personalised, standard thank-you letter for each participant? (1)
- [25]**

QUESTION 10: INTEGRATED SCENARIO

Your school has decided to hold a team racing car competition. Teams must create their own racing cars from scratch using specific guidelines regarding the car weight. Teams consist of learners in the same grade. A maximum of 10 drivers per team are allowed.

- 10.1 Study the entry form for registration below and answer the questions that follow:

1. Team name _____						
2. Car weight _____						
3. Number of drivers _____						
4. Do you have a disabled team member? Yes/No						
5.	Grade	8	9	10	11	12

- 10.1.1 Suggest THREE ways in which the layout of this form can be improved for electronic use. (3)
- 10.1.2 Write down ONE question in the form that can be improved by changing it to a closed-ended question. Describe how you would improve it. (2)
- 10.2 Information from the electronic forms is sent to a spreadsheet.
- 10.2.1 Name ONE online application that can be used to capture the entry form data. (1)
- 10.2.2 Give TWO advantages of using online forms. (2)
- 10.2.3 Name a spreadsheet feature that will allow you to highlight all racing cars that meet a certain criterion. (1)
- 10.3 How can a 3D printer be used to create a distinguishing feature for each car? (1)
- 10.4 During the event, the races will be streamed.
- 10.4.1 Briefly explain what *streaming* is. (2)
- 10.4.2 A camera fixed onto a drone will record the races.
- State TWO ways how data can be transferred from the drone camera to the computer for streaming. (2)
- 10.4.3 The broadcasting computer must have a high-speed connection.
- Give an example of a high-speed connection. (1)

10.5 Internet speed is usually indicated in the following format:

30/5 Mbps

10.5.1 What does the numbers usually represent? (2)

10.5.2 What unit of measurement is used for internet speed? (1)

10.6 Certificates are created in a word processor using a standardised document.

What is this standardised document called? (1)

10.7 The racing car competition will be covered by the school newspaper.

10.7.1 The school newspaper will be publishing photos of the event.

What word processing feature will they use to include a visible description above/below the photos? (1)

10.7.2 When pasting the table containing the results of the races, it does not fit across the width of the page of the word processing document.

Suggest an appropriate action to resolve this problem. (1)

10.7.3 Suggest TWO ways how the school newspaper can give recognition to community members who contributed photos and articles about the races. (2)

10.8 According to the POPI Act, geographic information is regarded as private.

Other than geographic metadata, give TWO examples of metadata that can be added to photos. (2)
[25]

TOTAL SECTION C: 50
GRAND TOTAL: 150