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**TOTAL
MARKS**

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NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2022

COMPUTER APPLICATIONS TECHNOLOGY: PAPER II

EXAMINATION NUMBER

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Time: 3 hours

150 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 36 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 on the question paper and hand it in at the end of the examination. Remember to write your examination number in the space provided.**
4. Non-programmable calculators may be used.
5. It is in your own interest to write legibly and to present your work neatly.
6. Read the questions carefully. Take note of the verbs of the questions, such as explain, name, select, discuss, and identify; and answer accordingly.
7. Give your answers in general terms e.g., use 'word processor' rather than 'Microsoft Word' or 'WordPerfect'. Use brand names only when asked.
8. In general, a mark is allocated per fact. Therefore, a two-mark question would require two facts, and so on. One-word answers will not necessarily give you the mark. Write in full sentences.
9. **DO NOT USE CORRECTION FLUID.**
10. One additional page (page 36) is included at the end of the paper. If you run out of space for an answer, use this page. Clearly indicate the number of your answer should you use this extra space.

FOR OFFICIAL USE ONLY:

MARKER TO ENTER MARKS BELOW									
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	TOTAL
15	10	23	16	10	13	13	22	28	/150
MARKER/MODERATOR TO INITIAL BELOW									

SECTION A**QUESTION 1**

1.1 Select the **MOST** appropriate answer to each question. Write the letter of your choice next to each question number in the space provided.

1.1.1 Which of the following would have ensured a safe supply of electricity for computers during load shedding?

- A Power supply
- B UPS
- C Modem
- D HUB

1.1.1	
-------	--

(1)

1.1.2 Identify the component that forms an integral part of the motherboard.

- A DIMM slots
- B DVD-ROM
- C USB drivers
- D Hard drive

1.1.2	
-------	--

(1)

1.1.3 The narrator in Windows is a(n) ... feature.

- A security
- B update
- C accessibility
- D maintenance

1.1.3	
-------	--

(1)

1.1.4 A small picture that provides a preview of a file without opening the file is called a(n) ...

- A thumbnail.
- B screenshot.
- C wizard.
- D icon.

1.1.4	
-------	--

(1)

1.1.5 Which one of the following refers to the use of cellular technology for the transfer of data?

- A WiMAX
- B Bluetooth
- C LAN
- D LTE

1.1.5	
-------	--

(1)

1.1.6 The school library promotes green computing. Which one of the following is **NOT** directly associated with green computing?

- A Recycling paper
- B Sleep mode
- C Security webcam
- D Paperless office

1.1.6	
-------	--

(1)

1.1.7 Which one of the following is an example of a popular e-reader?

- A iPad
- B Phablet
- C Kindle
- D Notebook

1.1.7	
-------	--

(1)

1.1.8 Identify the technology most commonly used to connect a variety of different devices to a computer.

- A ICT
- B CPU
- C USB
- D VoIP

1.1.8	
-------	--

(1)

1.1.9 With what is the icon shown here associated?

- A 4G
- B Hotspot
- C RSS
- D RFID



<www.vectorstock.com>

1.1.9	
-------	--

(1)

1.1.10 A protocol that provides a measure of protection to users of websites when online banking is done?

- A HTTP
- B HSPA
- C HTML
- D HTTPS

1.1.10	
--------	--

(1)

- 1.2 Choose the word(s) in Column B that **BEST** match(es) the definition in Column A. Write the letter of your choice next to each question number in the space provided, for example 1.2.6 M.

	Column A	Column B
1.2.1	Computer storage and memory are often measured in ...	A. utility
1.2.2	A specific file property that can be used to search for certain files.	B. en dash
1.2.3	A mid-sized horizontal line that is mostly used to show ranges in numbers and dates.	C. piggybacking
1.2.4	A unit used to describe the brightness of the image of a data projector.	D. protocol
1.2.5	Gaining unauthorised access to and making use of a connection in an unsecured Wi-Fi network.	E. bytes
		F. dash
		G. firewall
		H. lumen
		I. patch
		J. date
		K. GHz
		L. resolution
		M. big data

WRITE YOUR ANSWER HERE:

1.2.1	
1.2.2	
1.2.3	
1.2.4	
1.2.5	

(1)

(1)

(1)

(1)

(1)

[15]

MARKER'S USE ONLY:	Total mark Q1	
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QUESTION 2

2.1 Choose the **MOST** appropriate term/function (underlined and given in brackets) for each statement that follows. Write **ONLY** the term/function of your choice next to each statement number in the space provided.

2.1.1 (Contrast ratio/Aspect ratio) is a term used for a display that determines the difference between the darkest black and the brightest white.

2.1.1		(1)
-------	--	-----

2.1.2 Companies often release the (shareware/beta) versions of their software for testing purposes before the software is released for sale.

2.1.2		(1)
-------	--	-----

2.1.3 (Exporting/Converting) is the process of transferring data from a database to a spreadsheet without simply copying and pasting it.

2.1.3		(1)
-------	--	-----

2.1.4 The spreadsheet functions LEFT and RIGHT can be replaced by the (CONCATENATE/MID) function to get the same result.

2.1.4		(1)
-------	--	-----

2.1.5 The term DDR is associated with the (storage/RAM) of a computer.

2.1.5		(1)
-------	--	-----

2.2 Expand the following acronyms.**2.2.1 GPS**

(1)

2.2.2 RFID

(1)

2.2.3 HDMI

(1)

2.2.4 Wi-Fi

(1)

2.2.5 USB

(1)
[10]

MARKER'S USE ONLY:	Total mark Q2	
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25 marks


SECTION B**QUESTION 3 SYSTEM TECHNOLOGIES**

3.1 Complete the tables below by identifying the following images and stating their main function(s).

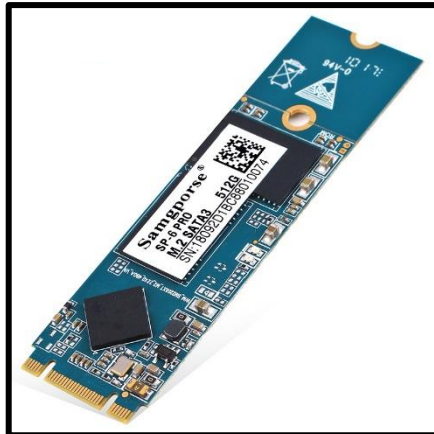
3.1.1

 [< ">https://www.ubuy.com.ro/en/product/>]	
Name of hardware	(1)
Main function	
	(1)

3.1.2

 [< ">https://www.techsnail.com/>]	
Name of app	(1)
Main function	
	(1)

3.1.3



[<<https://ming543154159.en.made-in-china.com/product/>>]

Name of hardware	(1)
Main function	(1)

3.1.4



[<<https://www.geewiz.co.za/>>]

Name of hardware	(1)
Main function	(1)

3.2 There are different types of storage built into a computer system.

Define *primary*, *secondary* and *removable storage*. Give an example of each.

Primary storage:

(1)

Example:

(1)

Secondary storage:

(1)

Example:

(1)

Removable storage:

(1)

Example:

(1)

- 3.3 There are different ways to connect a monitor to a computer. Study Figure 1 below and answer the questions that follow.



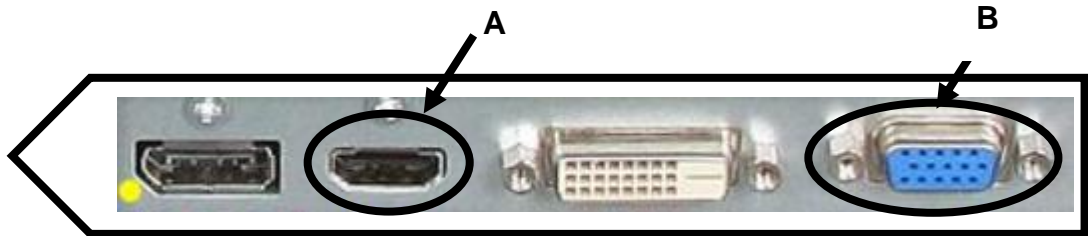
Figure 1

[<<https://naplestechnology.com/monitor-connections/>>]

- 3.3.1 On which expansion card would you find the three ports shown above?

_____ (1)

- 3.3.2 Name the port labelled A.



_____ (1)

- 3.3.3 State **TWO** disadvantages of the port labelled B.

_____ (2)

- 3.4 What type of input device is used to capture natural handwriting?

_____ (1)

- 3.5 Without restarting the computer or switching it off, state the **TWO** steps you would need to follow to close an application that has stopped working.

(2)

- 3.6 The use of mobile devices and online applications is becoming more popular with the use of technology. State **TWO** reasons why some users would rather use web-based applications than installed applications.

Reason 1:

Reason 2:

(2)
[23]

MARKER'S USE ONLY:	Total mark Q3	
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QUESTION 4 INTERNET AND NETWORK TECHNOLOGIES

4.1 Give **TWO** reasons for connecting computers in a network.

Reason 1:

(1)

Reason 2:

(1)

4.2 Learners taking part in a dance competition were requested to e-mail their video footage as an attachment.

4.2.1 Give **TWO** reasons why this request might not be sensible.

Reason 1:

(1)

Reason 2:

(1)

4.2.2 The judges of the competition made the videos available as podcasts. Define the concept *podcasting*.

(1)

- 4.2.3 Name **TWO** examples of electronic media that can be used to inform friends and family when a new podcast is available.

(2)

- 4.3 Figure 2 represents a typical network layout of the system used by a business owner working from home.



Figure 2

[<<https://www.lifewire.com/>>]

- 4.3.1 Identify the type of network illustrated in Figure 2.

(1)

- 4.3.2 Give **TWO** advantages of this type of network.

Advantage 1:

(1)

Advantage 2:

(1)

4.3.3 Briefly explain what a *virtual private network* (VPN) is.

(2)

4.4 When using the Internet, you can be exposed to social engineering. Explain what this statement means by explaining what social engineering refers to.

(1)

4.5 Give **ONE** reason why you would block pop-ups.

(1)

4.6 Identify **TWO** obstacles you could experience when viewing webpages on the Internet using a mobile device.

(2)

[16]

MARKER'S USE ONLY:	Total mark Q4	
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QUESTION 5**INFORMATION MANAGEMENT****Figure 3**

[<<https://www.aqueon.com/articles/fish-compatibility>>]

Peter has a passion for fish, and he got a fish tank for his birthday. He needs to build his fish tank, decide which types of fish to put in it and maintain the health of the fish.

- 5.1 Choosing fish that get along is a challenge every aquarist faces. For this reason, Peter decided to join an Internet group with the same interest. To join this group, he needs to complete a form.

- 5.1.1 The following item appeared in an online questionnaire:

Please fill in your date of birth:

Give **TWO** restrictions the creator of the form can enforce to ensure that Peter completes his date of birth in a specific format.

Restriction 1:

(1)

Restriction 2:

(1)

- 5.1.2 The asterisk (*) character often appears on the label when a user completes an online form, e.g., 'Name*'. What does this mean?

(1)

5.1.3 An online survey with the following URL was created:

www.myforms/mydocuments/dp/B003FSUDM4/3Mdp/Y27P3M/myform.html

Explain why one would use a URL shortener service, such as TinyURL. State the main benefit of using such a service.

Explanation:

(1)

Benefit:

(1)

- 5.2 The conditions in a fish tank are controlled using sensors and a microprocessor. To keep the fish healthy, the temperature must be at 25 °C and the oxygen content needs to be 20 ppm (parts per million). The tank contains a heater and an oxygen inlet controlled by a valve.

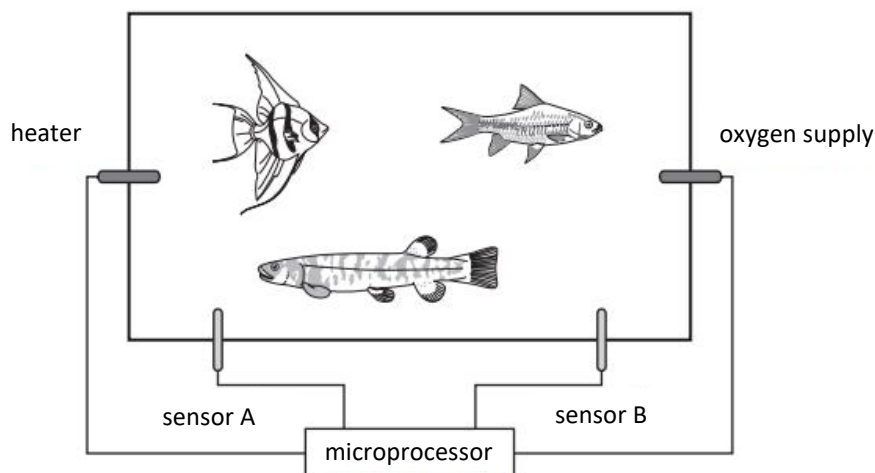


Figure 4

Use the headings given below to explain the process that will be used to maintain the correct conditions in the fish tank.

Input:

(1)

Processing:

(1)

Output:

(1)

5.3 Identify what type of data can be recorded from the two sensors used.

Sensor A:

(1)

Sensor B:

(1)
[10]

MARKER'S USE ONLY:	Total mark Q5	
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QUESTION 6**SOCIAL IMPLICATIONS**

New global research by TransUnion shows that online fraud increased exponentially in South Africa since the Covid-19 pandemic began – comparing March 2020 to March 2021.

In addition, the consumer credit-reporting agency's Global Consumer Pulse Study found that 37% of South African consumers have recently been targeted by Covid-19-related digital fraud.

[<<https://businesstech.co.za/news/it-services/>>]

- 6.1 6.1.1 Two common terms for digital fraud are *phishing* and *spoofing*. Briefly explain the difference between the two terms.

Phishing:

(2)

Spoofing:

(2)

- 6.1.2 Give users **THREE** tips to prevent them from falling victim to online fraud.

Tip 1:

(1)

Tip 2:

(1)

Tip 3:

(1)

6.2 Despite the potential risks of using computers, there are many benefits.

6.2.1 Give **TWO** advantages of using social networks for businesses.

Advantage 1:

(1)

Advantage 2:

(1)

6.2.2 Security companies connect their vehicles to the Internet. State **TWO** advantages of having these vehicles connected to the Internet.

Advantage 1:

(1)

Advantage 2:

(1)

6.3 Information overload is becoming an increasing problem in society.

State **TWO** practical ways in which one can use technology to reduce the problem of information overload in one's life.

Way 1:

(1)

Way 2:

(1)
[13]

MARKER'S USE ONLY:	Total mark Q6	
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QUESTION 7**SOLUTION DEVELOPMENT**

7.1 Learners at school often use a word processor to complete their assignments. In some instances, learners struggle to use the features. Guide them by answering the following questions.

7.1.1 Where should one place text in a word-processing document so that it automatically appears on every page?

(1)

7.1.2 Learners are required to use *footnotes* when doing their research projects.

Explain what a *footnote* is and why learners are required to use it in their research projects.

(2)

7.1.3 One of the learners added a table of contents to a document but found that none of the headings were included in the table of contents.

Indicate what the learner must do to include the headings in the table of contents.

(1)

- 7.2 Study the extract from the school database below and answer the questions that follow:

Field name	Description
Surname	Surname of the learner
Name	Name of the learner
Grade	Grade of the learner
Parent_number	Cell phone number of parent
Learner_number	Unique number assigned to the learner
Learner_password	Password assigned to the learner
Internet_usage	Amount of data used by learner

- 7.2.1 To which field of the database table would you assign a primary key?

_____ (1)

- 7.2.2 Which feature in the design view of the database would you use to place a combo box in the Grade field?

_____ (1)

- 7.2.3 Identify the data type that should be used for the Parent_number field?

_____ (1)

- 7.2.4 To obtain the Internet usage for each grade, what feature of a database report should be used?

_____ (1)

- 7.2.5 In which section of the report would you place a formula to determine the total Internet usage for all the learners?

_____ (1)

7.3 Examine the following screenshot from a spreadsheet:

	A	B	C	D	E	F	G	H
1	Seaside Holiday Hotel							
2								
3	Residents information			Room Rate	R1 870.00			
4								
5	Surname	Name	Room number	Date-In	Date-Out	Total days	Number of people	Invoice
6	Pearlene	Boudrie	201	30-Nov-22	12-Dec-22	12	2	R44 880.00
7	Kathryn	Bonalumi	204	27-Nov-22	08-Dec-22	11	2	R0.00
8	Suzan	Landa	302	01-Dec-22	26-Dec-22	25	3	#VALUE!
9	Sommer	Agar	303	30-Nov-22	30-Dec-22	30	2	#####
10	Rupert	Hinkson	402	10-Dec-22	03-Jan-23	24-Jan-00	4	#####

Figure 5

Reservations that were made are captured by the Seaside Holiday Hotel data capturer. Once the information is captured, the outstanding amount is calculated.

7.3.1 Cell F10 has failed to give the same output as the previous cells. Explain what needs to be done to rectify the situation.

(1)

7.3.2 Explain in your own words what needs to be done to obtain the amount displayed in cell H6 in the Invoice column.

(1)

7.3.3 Explain the most likely cause why the formulas in H7:H10 are not working correctly.

(2)

[13]

MARKER'S USE ONLY:	Total mark Q7	
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75 marks

SECTION C**QUESTION 8 INTEGRATED SCENARIO**



Connection 4 All



[<<https://www.tachus.com/post/wifi-vs-internet>>]

With a lot of people still not having access to Internet, your parents have decided to open an Internet Café in your neighbourhood to give all residents in the area access to computers and the Internet. They need your advice and assistance to get the place set up and running.

- 8.1 Your parents want to buy a computer for the running of their business. They are considering one of the computers in the following two advertisements.

COMPUTER A	COMPUTER B
 <p>HP ProDesk 600 G1 – Intel i5, 8GB, SSD + 19" Monitor (Refurbished)</p> <p>Business Grade Intel i5 Desktop + 19" – 240GB SSD – Free Nano Wi-Fi Receiver Keyboard & Mouse – 1 Year Warranty</p> <p>Ships in 5 – 7 workdays Sold by igit Technologies</p> <ul style="list-style-type: none"> • Free delivery available • Hassle-free exchanges & returns for 30 days • 12-Month limited warranty <p>R6 399</p>	 <p>HP 255 G8 15.6' AMD Athlon 3020e 4GB RAM 1TB HDD Win 10 Home Laptop 2VOW2ES HP SKU: 2VOW2EW</p> <p>R7 019</p>

[<<https://www.takealot.com/hp-prodesk-600-g1-intel-i5-8gb-ssd-19-monitor-refurbished/>>]

[<<https://www.hponline.co.za/products/>>]

- 8.1.1 Considering the two computers identified, which computer would you suggest they buy to run their business? Indicate your choice by marking one block with an X. Justify your option by giving two reasons.

Computer A ☐

OR

Computer B ☐

(1)

Reason 1:

(1)

Reason 2:

(1)

- 8.1.2 Which **TWO** hardware specifications listed in the advertisements will be the most important in determining the performance of the computer.

(2)

- 8.1.3 What does the specification 8 GB in Computer A's advert on page 25 refer to?

(1)

- 8.1.4 The advert for Computer A also specifies the term *refurbished*. Explain what *refurbished* means in this context?

(2)

- 8.1.5 Name **TWO** possible storage devices or media not included in the advertisements that could add more than 10 GB of storage space.

Storage 1:

(1)

Storage 2:

(1)

- 8.2 Your parents need to have their computer for the Internet Café linked wirelessly to a file server.

- 8.2.1 Give **TWO** general advantages of connecting computers and devices wirelessly, besides cost.

Advantage 1:

(1)

Advantage 2:

(1)

- 8.2.2 What type of communication device would they have to install to ensure wireless access for every station?

(1)

8.3 Your parents need to install an Internet connection in the Internet Café. They need to choose an ISP and a broadband connection.

8.3.1 Define the acronym ISP and explain its role in enabling access to the Internet.

Acronym:

_____ (1)

Explanation:

_____ (1)

8.3.2 Give an example of an ISP.

_____ (1)

8.3.3 Give **TWO** kinds of services that an ISP will typically offer, apart from enabling access to the Internet.

Service 1:

_____ (1)

Service 2:

_____ (1)

8.3.4 Discuss what the term *bandwidth throttling* means.

_____ (1)

- 8.4 Your parents need to create a basic website to advertise their Internet Café. Study the HTML code below.

```
<title>
  Connection 4 All
<hr/>
</title>
<body>
  <h1>COME AND EXPLORE THE WORLD OF THE INTERNET! </h1>
  <font colour="red">
    Come to our store now should you need an Internet connection!
  </font> <br/>
</body>
```

Identify what needs to be changed in the HTML code to correct the following mistakes:

- 8.4.1 The horizontal line is not displayed when the website is viewed in a browser.

(1)

- 8.4.2 The heading 'COME AND EXPLORE THE WORLD OF THE INTERNET!' should be smaller.

(1)

- 8.4.3 The text 'Come to our store now should you need an Internet connection!' should be displayed in a red font, but it is displayed in black.

(1)
[22]

MARKER'S USE ONLY:	Total mark Q8	
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QUESTION 9 INTEGRATED SCENARIO (continued)

- 9.1 Your parents will also host a website to be part of a social network that will allow players to register and play online games.

Separate versions of gaming software applications are developed to support different operating systems, such as Android and IOS.

- 9.1.1 Motivate why the same application needs to be programmed differently for different operating systems.

(1)

- 9.1.2 An important feature of an operating system is backward compatibility. Use an example to explain the concept of *backward compatibility*.

(2)

- 9.1.3 Some gaming apps allow the mouse icon to be customised. Where would you change the mouse icon to a different icon, like a pen?



Figure 6

(2)

9.2 One of the gamers will use the headset in Figure 7 below.



Figure 7

[<<https://www.theguardian.com/technology/>>]

9.2.1 Give the **MOST** appropriate name to identify the headset.

_____ (1)

9.2.2 The headset supports plug-ins. Explain what a plug-in is.

_____ (1)

9.2.3 How will a plug-in benefit a gamer when using a headset?

_____ (1)

9.3 These types of devices normally contain sensors.

Name **TWO** possible types of sensors found on gaming devices.

_____ (2)

9.4 Some gamers might be unable to use their hands. Motivate **TWO** alternative input devices your parents would need to purchase for these gamers to enable them to play the games.

_____ (2)

9.5 AR Dragon is a new augmented reality pet simulator.



Figure 8

[<<https://iphone.apkpure.com/ar-dragon/>>]

9.5.1 Explain the difference between virtual reality (VR) and augmented reality (AR) by defining these two terms.

Virtual reality:

(1)

Augmented reality:

(1)

9.5.2 Name **TWO** disadvantages of augmented reality (AR).

Disadvantage 1:

(1)

Disadvantage 2:

(1)

- 9.6 Your parents would like learners to make use of the Internet Café to complete school assignments. For this reason, they need to capture learners' information on a registration form when the learners visit the Internet Café for the first time.

All the learners' information will be captured in a database table. Which *field properties* of the following database fields need be changed to ensure that:

- 9.6.1 The First Name field is limited to 15 characters.

(1)

- 9.6.2 The Customer_ID field is not left blank.

(1)

- 9.7 If the country were still under restrictions for Covid-19, your parents would have had to capture some information for each learner visiting the café. Name the **TWO** most important pieces of data they would have needed to record for each learner to be able to do contact tracing.

(2)

- 9.8 Learners mostly use the computers to type their projects using a word processor. One feature is the use of comments.

Give an example of how the use of comments would be beneficial.

(1)

9.9 Two of the problems the learners might encounter when using the Internet Café, follow below. Suggest **TWO** solutions they can attempt when troubleshooting the problems.

9.9.1 The printer is functional, and the document has been sent to the printer, but it does not want to print.

Solution 1:

(1)

Solution 2:

(1)

9.9.2 There are a few lines of text that do not fit onto a page.

Solution 1:

(1)

Solution 2:

(1)

9.10 Give **TWO** examples where you would use the *Save As* command instead of the normal *Save* command in a word processor.

Example 1:

(1)

Example 2:

(1)

- 9.11 One of the learners was editing a report in the word processor when the following message appeared:

Error!Bookmark not defined

Briefly explain what the function of a bookmark in a word processor is.

(1)
[28]

MARKER'S USE ONLY:	Total mark Q9	
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50 marks

Total: 150 marks

MARKERS' USE ONLY

ADDITIONAL SPACE (ALL questions)

REMEMBER TO CLEARLY INDICATE AT THE QUESTION THAT YOU USED THE ADDITIONAL SPACE TO ENSURE THAT ALL ANSWERS ARE MARKED.

[illegible]