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**TOTAL MARKS**

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NATIONAL SENIOR CERTIFICATE EXAMINATION  
NOVEMBER 2020

**COMPUTER APPLICATIONS TECHNOLOGY: PAPER 1**

**EXAMINATION NUMBER**

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Time: 3 hours 150 marks

**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

1. This question paper consists of 44 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 wording of the questions, i.e. explain, name, select, discuss, identify, etc. and then answer accordingly.
7. Give your answers in general terms. Use brand names only when asked, e.g. use "word processor" rather than "Microsoft Word" or "WordPerfect".
8. In general, a mark is allocated per fact. Therefore, a two-mark question would require two facts, and so on.
9. **DO NOT USE CORRECTING FLUID.**
10. One blank page (page 44) is included at the end of the paper. If you run out of space for a question, use this page. Clearly indicate the question number of your answer should you use this extra space.

**FOR OFFICE USE ONLY:**

<b>MARKER TO ENTER MARKS BELOW</b>									
<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q5</b>	<b>Q6</b>	<b>Q7</b>	<b>Q8</b>	<b>Q9</b>	<b>TOTAL</b>
<b>15</b>	<b>10</b>	<b>20</b>	<b>19</b>	<b>10</b>	<b>12</b>	<b>14</b>	<b>26</b>	<b>24</b>	<b>/150</b>
<b>MARKER/MODERATOR TO INITIAL BELOW</b>									

**SECTION A**

**QUESTION 1**

1.1 Choose the word(s) in Column B that **BEST** matches the definition in Column A. Write down **ONLY** the letter of your choice in the space provided, for example 1.1.6 M.

	<b>Column A</b>	<b>Column B</b>
1.1.1	Full software packages available to a user, for a trial period, and at no cost.	A. plagiarism
1.1.2	An alternative technology used for identification purposes.	B. QR
1.1.3	Laws that protect ownership and rights to intellectual property.	C. path
1.1.4	A web protocol used by browsers and web servers to provide secure data transfer.	D. RSS
1.1.5	The combination of names that indicates where a folder or file is stored on a computer.	E. open source software
		F. HTML
		G. copyright
		H. https
		I. address
		J. shareware
		K. txt
		L. RFID

**WRITE YOUR ANSWERS HERE**

1.1.1		(1)
1.1.2		(1)
1.1.3		(1)
1.1.4		(1)
1.1.5		(1)

1.2 Select the **MOST** appropriate answer to each question. Write down **ONLY** the letter of your choice in the space provided.

1.2.1 Which device is **NOT** an input device?

- A Speaker
- B Track ball
- C Fingerprint scanner
- D Joystick

1.2.1	
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(1)

1.2.2 Which function is used in a spreadsheet to find the total of cell values in a range, but only if a specific condition is met?

- A AVERAGEIF
- B COUNTIF
- C SUMIF
- D NESTEDIF

1.2.2	
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(1)

1.2.3 Which of the following assists the user in organising, maintaining and improving the efficiency of a computer system?

- A Communication software
- B Utility software
- C Database management system
- D Access control software

1.2.3	
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(1)

1.2.4 Which acronym refers to human–computer interaction through the use of visual controls such as buttons and icons?

- A BIOS
- B GPS
- C GUI
- D LTE

1.2.4	
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(1)

1.2.5 In a database report, the records have been grouped by the Learner field. A count function is used to determine how many certificates each learner has obtained. This function must be placed in the ...

- A detail section.
- B group header section.
- C page footer section.
- D report header section.

1.2.5	
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(1)

1.2.6 Foursquare is a mobile app that recommends new services based on your past use of services. Foursquare could therefore be categorised as social...

- A information.
- B networking.
- C interaction.
- D communication.

1.2.6	
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(1)

1.2.7 ... is/are where the attributes of a file can be set as hidden and read-only.

- A File properties
- B File names
- C File extension
- D All of the above

1.2.7	
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(1)

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

- A References
- B View
- C Review
- D Developer

1.2.8	
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(1)

1.2.9 Which **ONE** of the following applications is **NOT** a web browser?

- A Mozilla Firefox
- B Adobe Reader
- C Google Chrome
- D Microsoft Edge

1.2.9	
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(1)

1.2.10 Which **ONE** of the following is **NOT** an example of a multipurpose device/ computer?

- A Tablet
- B Webcam
- C Notebook
- D Phablet

1.2.10	
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(1)  
**[15]**

MARKER'S USE ONLY:	Total mark Q1	
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**QUESTION 2**

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

2.1.1 A legal agreement that describes what you may and may not do with software. (AUP/EULA).

2.1.1		(1)
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2.1.2 A (title bar/menu bar) is a bar at the top of a window that bears the name of the program you are working in and the name of the file you are working on.

2.1.2		(1)
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2.1.3 If an instruction is used repeatedly by a program, it is temporarily stored in (secondary memory/cache memory).

2.1.3		(1)
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2.1.4 The global address of a website is called a (Uniform Resource Locator/Unique Resource Locator).

2.1.4		(1)
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2.1.5 A (smart card/smart tag) is a pocket-sized device with embedded integrated circuits that can process data.

2.1.5		(1)
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2.1.6 The instructions for starting (booting) a computer are stored in (RAM/ROM).

2.1.6		(1)
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2.2 Give an appropriate definition that would **BEST** describe the following terms.

2.2.1 Ergonomics

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(1)

2.2.2 Compressing

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(1)

2.2.3 Defragmentation software

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(1)

2.2.4 Network interface controller

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(1)  
[10]

**25 marks**

MARKER'S USE ONLY:	Total mark Q2	
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**SECTION B**

**QUESTION 3 SYSTEM TECHNOLOGIES**

3.1 Give the names and main functions of the items appearing in the images in the tables below.

3.1.1



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

<b>Name of hardware</b>	
	(1)
<b>Main function</b>	
	(1)

3.1.2



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

<b>Name of hardware</b>	
	(1)
<b>Main function</b>	
	(1)

MARKERS' USE ONLY

3.1.3



[<<https://www.smallbusinesscomputing.com/ProductReviews/Hardware>>]

<b>Name of hardware</b>	
	(1)
<b>Main function</b>	
	(1)

3.1.4

MARKERS' USE ONLY



[<<https://simplynuc.co.uk/>>]

<b>Name of hardware</b>	
	(1)
<b>Main function</b>	
	(1)

- 3.2 Desktop computers are still in use today by many companies and especially gamers. Refer to the advert below when answering the questions that follow.



**R14 278,96**

(Including VAT)

**R13 599,00**

(Discounted price – INC VAT)

Discount only available when paying by EFT

**Standard features include:**

Intel 9<sup>th</sup> Generation Core i7-9700K (3.6 GHz, 12 MB Cache, 8x Cores,  
Turbo 4.9 GHz CPU

MSI Z390-A PRO DDR4 LGA 1151 USB 3.1 GEN 2 Intel gaming motherboard

GEFORCE GT 1030 2 GB OC EDITION DirectX12 graphics card

8 GB DDR4 2 666 MHz high-performance gaming RAM with heat spreader

512 GB SSD up to 550 MB/s +speed ultra-fast solid-state drive (OS Drive)

500 W 80+ high-performance power supply

EVETECH TRIO RGB tempered-glass gaming case

6x RGB 120 mm dual-ring high-quality RGB LED fans

Integrated 8 CH high-definition sound card

LCD optional

24 months warranty

[<<https://www.evetech.co.za/intel-9th-gen-cor-i7-9700k-pro-workstation-desktop>> (18/12/2019)]

3.2.1 Why is the value, 4.9 GHz, of the Turbo 4,9 GHz CPU important, especially if you are a gamer?

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(1)

3.2.2 **Differentiate** between a solid-state drive as stated in the advert and a hard disk drive that could be purchased as an alternative drive.

Solid-state drive:

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Hard disk drive:

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(2)

3.2.3 Expand the acronym LCD indicated in the advert.

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(1)

3.2.4 To improve your gaming performance you would need to upgrade some hardware components. Explain why it will be necessary to upgrade the hardware components indicated below, especially for a gamer.

(a) RAM:

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(b) Sound card:

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(c) Graphics card:

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(d) CPU:

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(4)

3.3 Most gamers in South Africa are concerned about power outages and power surges and their effect on their computer systems.

3.3.1 Name **ONE** danger that these power outages and other power-related problems could cause to the computer system.

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(1)

3.3.2 What hardware device can a gamer use to protect their computer against power surges and spikes?

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(1)

3.3.3 What is the main function of the operating system?

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(1)

3.4 Expand the acronym "MB".

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(1)  
**[20]**

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

Africa's first 5G network has arrived. It's the future of all things internet, allowing South Africans to do more with data than ever before. And it all begins with 5G for the home.



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

4.1 Identify the **G** in the term **5G** network technology.

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(1)

4.2 Give **ONE** example of how a client will connect to the internet using 5G network technology.

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(1)

4.3 Supersonic is an ISP that is highly ranked when service providers in South Africa are compared. They offer capped packages, uncapped-shaped packages and uncapped-unshaped packages to their clients. Explain each of the following terms.

4.3.1 Capped:

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(1)

4.3.2 Uncapped:

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(1)

4.3.3 Shaped:

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(1)

4.3.4 Unshaped:

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(1)

4.4 When browsing the internet, people often need to click on hyperlinks provided. Give **TWO** reasons why it is a good idea for a person to choose a broadband connection instead of a dial-up modem connection.

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(2)

4.5 One of Supersonic's clients needs to make use of a network and decides to make use of a *WLAN*.

4.5.1 Identify **ONE** indicator that will prove to the client that he is connected to a network?

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(1)

4.5.2 Define the term *WLAN*. Do not merely expand the acronym in your answer.

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(2)

4.5.3 Fibre optic cable is extensively used in networks today as it is becoming more affordable. Name **ONE** advantage of using a fibre-optic cable rather than a copper cable.

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(1)

- 4.6 A client is doing research that involves identifying DNA strands. Someone suggests that she uses grid computing because she has to identify thousands of human genes.

What is meant by the term *grid computing*?

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(2)

- 4.7 When connected to a network or the internet, you should implement security tools. Many end-users think that a firewall will prevent their computer from being infected by viruses.

Explain why this is not the case by explaining what the general function of a firewall is.

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(2)

4.8 Expand the acronym FTP.

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(1)

4.9 List **TWO** limitations of using cloud computing.

Limitation 1:

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Limitation 2:

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(2)  
**[19]**

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

Technology is an integral part of industry today. As technological development in the field of electronics has progressed, automated control of industrial processes has become the preferred method of control in many industrial companies. This makes use of remote automation. An industrial communications company, Throughput Technology, offers many automated control solutions.

**Making reliability & workability in industrial connectivity a reality in the control & automation sectors.**  
**ALL THAT MATTERS**  
**WE SPEAK INDUSTRIAL DATA COMMUNICATIONS**

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

5.1 Robert Downey Jr is the production manager of Cyber Cars Inc. His objectives are to improve the quality of his products. In order to do so, Robert Downey Jr approached Throughput Technologies to assist him as he wants a system that will notify him of any problems with regard to equipment and technology used in Cyber Cars Inc.

5.1.1 Throughput suggested that an alarm system be installed so that the operator, Chris Hemsworth, can be notified of any problems.

What must be done with the device carried by Chris Hemsworth to ensure that he will be notified of problems on his device?

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(1)

5.1.2 Give **TWO** ways in which Chris' device could notify him of a problem.

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(2)

5.1.3 If Chris Hemsworth does not respond, what measures can Throughput implement to ensure that the problem will receive the necessary attention?

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(1)

5.2 Production needs to be continuous. Identify **TWO** possible problems that Chris Hemsworth needs to monitor with his device to prevent a halt in production.

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(2)





**QUESTION 6 SOCIAL IMPLICATIONS**

**Smartphone users in South Africa 2014–2023**

Published by Arne Holst, Nov 11, 2019

Today about 20 to 22 million people in South Africa, which accounts for about one third of the country's population, use a smartphone. The number of smartphone users is forecast to grow by more than five million by 2023. These days, almost every single person uses technology in some way, shape or form to make life easier. That means that we're online more than ever before.

[<<https://www.statista.com/statistics/488376/forecast-of-smartphone-users-in-south-africa/>>]

6.1 Identify the term used to describe a gap in terms of access to and usage of information and communication technology.

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(1)

6.2 Information overload can become a problem in your personal life. Give **TWO** skills you have to acquire to handle the masses of information available.

Skill 1:

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Skill 2:

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(2)

6.3 Define the term *online*.

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(1)

6.4 Give **THREE** dangers that constantly using your smartphone could pose to your health.

Danger 1:

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Danger 2:

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Danger 3:

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(3)

6.5 What is the term generally used for manipulating or tricking a user into giving away confidential information, for example passwords?

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(1)

6.6 Computer "theft" includes the theft of "computer power" by using malicious *bots* in cyber-attacks. Briefly explain what the term *bots* means.

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(2)

6.7 Give **TWO** reasons why anti-spyware software needs to be updated by referring to how spyware is normally detected or "blocked".

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(2)

[12]

MARKER'S USE ONLY:	Total mark Q6	
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7.3 Eric is concerned that he will have to retype the medical information into the table for each patient's diagnosis. You explain that you can link Table 1, the client's table, and Table 2, the medical information table.

7.3.1 Give the phrase/sentence used by database programmers for this linking of tables.

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(1)

7.3.2 What procedure will you follow, in general terms, to link the two tables?

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(2)

7.4 Give a general name for an HTML element such as '<h1>' or '</b>'.

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(1)

7.5 Explain how you would open an HTML file so that you can edit the HTML code.

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(2)

7.6 Complete the table below by describing the reason why you would include the following elements as part of the code of an HTML file.

Element	Reason to include it in your HTML structure
7.6.1 <p> ... </p>	
7.6.2 <!-->	

(2)  
[14]

MARKER'S USE ONLY:	Total mark Q7	
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**75 marks**

**SECTION C**

**QUESTION 8 INTEGRATED SCENARIO**



**Delivering Smiles Since 1998**

A truly South African success story with an excellent track record, Globeflight is passionate about offering you and your business high-quality courier services. Think of us as your one-stop friendly courier service!

See how Globeflight can make a difference to you and your business:

- 24/7/365 fast delivery.
- Worldwide coverage and logistics.
  - Expansive fleet.
  - Highly specialised.
- State-of-the-art technology.
- Top-notch customer service.
  - Passion for people.

**We say what we do and then we do as we say.**

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

8.1 The computers at the Globeflight Head Office need to be connected in a network. How does a network server differ from an ordinary PC linked to the network?

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(2)



8.2 Globeflight works with data and information on a daily basis to ensure that parcels are delivered on time to the correct customers.

Is there any difference between data and information? Motivate your answer.

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(2)

8.3 List **TWO** ways in which Globeflight can protect their sensitive data, besides restricting access to the data?

Approach 1:

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Approach 2:

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(2)

8.4 All Globeflight operators use physical keyboards instead of on-screen keyboards. Apart from being faster, give **ONE** reason why the company would prefer the use of physical keyboards?

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(1)

8.5 Give **TWO** reasons why Globeflight will not allow their employees to bring their own portable storage media to work.

Reason 1:

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Reason 2:

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(2)

8.6 When Globeflight dispatches their parcels they use a barcode scanner. Give **ONE** advantage of using a barcode scanner.

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(1)

8.7 Globeflight decides to employ a visually impaired operator to take calls and capture data. Give **THREE** examples of specialised input or output devices that would assist the operator.

Example 1:

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Example 2:

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Example 3:

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(3)

8.8 Globeflight wants to have apps developed that will be compatible with both Android and Microsoft. Explain what is meant by this statement.

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(1)

8.9 When Globeflight installs new software, why is it more important for their hardware to satisfy the recommended requirements of the new software program, rather than the minimum requirements of the software?

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(2)

8.10 Globeflight wants to monitor their service during the year, focusing on monthly statistics.

8.10.1 What type of chart would you recommend they use to display these monthly statistics? Motivate your answer.

Chart type:

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Motivation:

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(2)

8.10.2 List **FOUR** important elements that should be in any chart to ensure that a chart will be readable, understood and effective.

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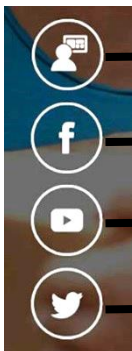
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(4)

8.11 In the figure below you are given four choices of social media platforms that can be used to learn more about Globeflight. Identify the platforms in the spaces provided.



A \_\_\_\_\_

B \_\_\_\_\_

C \_\_\_\_\_

D \_\_\_\_\_

(4)  
[26]

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

9.1 Globeflight's IT department needs to ensure optimal performance of all computers.

9.1.1 The Disk Clean-up software could be used as an option to speed up the performance of their computers. Define the term *Disk Clean-up* and explain how it works.

Definition:

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How it works:

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(2)

9.1.2 Identify another method that could be used to free up space on the hard drive.

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(1)

9.2 When a client visits the Globeflight website the following pop-up message appears:



[<[https://www.google.com/search?cookie\\_consent](https://www.google.com/search?cookie_consent)>]

9.2.1 Define the term *cookie* used in the message.

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(1)

9.2.2 Give **ONE** reason why a cookie could be beneficial to a client, apart from ensuring you get the best experience when visiting a website.

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(1)

9.3 One of Globeflight's customers notices that when she opens her web browser, it goes directly to the Globeflight website. She would prefer it to go directly to a search engine.

What is the difference between a web browser and a search engine?

9.3.1 Web browser:

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(1)

9.3.2 Search engine:

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(1)

9.4 The Chief Financial Officer of Globeflight needs to create a monthly presentation of the financial status of the company. A graph from a spreadsheet has been inserted into the presentation, but every time the data in the spreadsheet changes, the graph has to be redrawn and re-inserted into the presentation. Briefly explain the **THREE** steps she can take to prevent this from having to be done each time the data changes.

Step 1:

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Step 2:

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Step 3:

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(3)

9.5 Exporting and importing data are important processes in working with data and information. Briefly explain the difference between these two processes.

9.5.1 Exporting:

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(1)

9.5.2 Importing:

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(1)

9.6 The secretary was given a brand new inkjet printer. The printer is connected to the computer and there is communication between the computer and the printer, however, it will not print.

State **TWO** possible causes of this problem.

Cause 1:

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Cause 2:

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(2)



9.7 To rate Globeflight's service, the marketing manager wants to set up a questionnaire.

9.7.1 Name a type of document created with a word processor that would allow respondents to answer a questionnaire electronically.

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(1)

9.7.2 Give **ONE** aspect to consider when setting up a questionnaire that will allow the marketing manager to collect relevant data that can be analysed efficiently.

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(1)

9.7.3 The following rule was entered into a database to prevent inaccurate input as Globeflight wants to ensure that a driver doesn't spend more than eight hours on the road when delivering parcels.

$\leq 0$  OR  $\geq 8$

Give **TWO** reasons why this rule is irrelevant, unusable or incorrect.

Reason 1:

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Reason 2:

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(2)

9.8 Since Globeflight prefers that their employees work with a physical keyboard when capturing data, a newly appointed employee suggests the use of a virtual keyboard.

Briefly explain what is meant by the term *virtual keyboard* and give **ONE** possible advantage and **ONE** possible disadvantage of using such a keyboard.

9.8.1 Virtual keyboard:

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(2)

9.8.2 Advantage:

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(1)

9.8.3 Disadvantage:

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(1)

9.9 The employees need to ensure that they are always kept up to date with the latest weather forecast as this could impact on the time it will take to deliver a parcel. This feature needs to be visible as soon as the operators log on to their computers.

Give the general name given to this type of feature that they will need and give one other example of this type of feature.

General name:

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Another example:

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(2)  
[24]

MARKER'S USE ONLY:	Total mark Q9	
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**50 marks**

**Total: 150 marks**

