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TOTAL
MARKS

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NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2024

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 33 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 blocks above.**
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 33) is included at the end of the paper. If you run out of space for an answer, use this page. Clearly indicate the question 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
13	12	23	18	10	16	8	25	25	/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 What is the refresh rate of a computer screen measured in?

- A fps
- B Hz
- C rpm
- D m/s

1.1.1	
-------	--

(1)

1.1.2 Which of the following is an input device?

- A Webcam
- B Headphones
- C Braille Reader
- D Data projector

1.1.2	
-------	--

(1)

1.1.3 In word processing, Harvard and APA are styles associated with...

- A headings.
- B captions.
- C bibliography.
- D footnotes.

1.1.3	
-------	--

(1)

1.1.4 What series listed below **CANNOT** be generated when using the AutoFill option in Excel?

- A Mon, Tue, Wed, Thu
- B 2, 5, 8, 11
- C 1-10-2024, 2-10-2024, 3-10-2024, 4-10-2024
- D a, b, c, d

1.1.4	
-------	--

(1)

1.1.5 A feature of software that enables users to interact with visual controls like buttons and icons is known as:

- A RSI
- B GUI
- C GPS
- D JPG

1.1.5	
-------	--

(1)

1.1.6 Which of the listed options can function as a method to prevent an individual from accessing harmful Internet content?

- A Bookmarks
- B Private browsing
- C Website filters
- D Searching

1.1.6	
-------	--

(1)

1.1.7 Which key(s) will be used to move to the next cell on the right when working in tables in Word Processing?

- A Shift + TAB
- B CTRL + TAB
- C ALT + TAB
- D TAB

1.1.7	
-------	--

(1)

1.1.8 VLC media player is an example of ... software.

- A system
- B antivirus
- C proprietary
- D open-source

1.1.8	
-------	--

(1)

1.2 Provide explanations for the following acronyms. Write detailed descriptions in the space provided. **NO MARK** will be awarded for just expanding the acronym.

1.2.1 PDA

(1)

1.2.2 SOHO

(1)

1.2.3 Meme

(1)

1.2.4 NIC

(1)

1.2.5 URL

(1)

[13]

MARKER'S USE ONLY:	Total mark Q1	
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QUESTION 2

- 2.1 Choose the term/concept in Column B that **BEST** match(es) the description in Column A. Write the letter of your choice next to each question number in the space provided, for example 2.1.1 Q.

	Column A	Column B
2.1.1	The keyboard key/s commonly used to obtain help in application programs.	A. Opening tag
2.1.2	A space-based satellite navigation system that provides location and time information.	B. DPI
2.1.3	Tags that have only an opening and no closing tag are called ...	C. GPS
2.1.4	Amount of data that can travel from one point to another over a connection in a set period of time.	D. En-dash
2.1.5	A horizontal line, which is a little longer than a hyphen, used to express ranges and parenthetical expressions.	E. Broadband
2.1.6	The specification in which the speed of a printer is measured.	F. F1
2.1.7	Memory storing the initial instructions for a computer's startup, and essential for booting up the operating system.	G. Bandwidth
		H. RAM
		I. Empty tag
		J. HTML
		K. Ctrl + H
		L. ROM
		M. Em-dash
		N. Geotagging
		O. LTE
		P. PPM

2.1.1		(1)
2.1.2		(1)
2.1.3		(1)
2.1.4		(1)
2.1.5		(1)
2.1.6		(1)
2.1.7		(1)

2.2 The following statements given are incomplete. Complete the statements by filling in the missing term. Write **ONLY** the term next to each question number in the space provided.

2.2.1 _____ refers to using technology to create simulations of a 3D environment.

2.2.1	
-------	--

(1)

2.2.2 _____ use sensors to capture images, then stores the data digitally on a memory card.

2.2.2	
-------	--

(1)

2.2.3 The _____ property can be assigned to a file to prevent any changes being made to the file.

2.2.3	
-------	--

(1)

2.2.4 _____ is a keyboard shortcut used for cutting contents from a document to be pasted somewhere else.

2.2.4	
-------	--

(1)

2.2.5 _____ refers to the software's capability to open and use files created in earlier (older) versions of the software.

2.2.5	
-------	--

(1)

[12]

MARKER'S USE ONLY:	Total mark Q2	
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25 marks

SECTION B**QUESTION 3 SYSTEM TECHNOLOGIES**

3.1 In the space provided, identify the following images, or where indicated state the main function(s) and the connectivity method.

3.1.1



[<<https://www.indiamart.com/proddetail//>>]

Name of hardware

(1)

3.1.2



[<<https://www.fastrak.co.za/cdn/shop/products///>>]

Name of hardware

(1)

3.1.3



[<<https://play.google.com/store/>>]

Name of application

(1)

3.1.4



[<<https://itexperience.net/>>]

Main function

(1)

3.1.5



[<<https://game4u.co.za/product/>>]

**Main function and
connectivity method**

(2)

3.2 Software is an important part of a computer. In many cases, when trying to install software like an office suite, it requires a product key.

3.2.1 Explain what a product key is.

(1)

3.2.2 Give **ONE** reason why software developers would use a product key.

(1)

3.3 Most portable computers are manufactured without optical drives.

Give **TWO** reasons why most portable computers are increasingly being designed not to include optical drives.

Reason 1:

(1)

Reason 2:

(1)

3.4 Motivate why replacing the hard drive could improve the performance of a computer.

(2)

3.5 All the hardware items on a computer inventory have been barcoded.

Give **ONE** benefit of using a barcoding system, apart from the fact that scanning barcodes is much faster than manually entering the codes.

(1)

3.6 Provide **TWO** reasons why someone would rather replace a computer than upgrading it.

Reason 1:

(1)

Reason 2:

(1)

3.7 Computers are used to create documents that need to be printed from time to time.

3.7.1 Andrew wants to print advertising material for his company. He has the option of using either an inkjet printer or a laser printer.

The following statements about printers are given:

1. Can print in colour.
2. Uses a charged drum to create the printed item.
3. Uses powdered toner.
4. Creates output line by line using a print head.

Match the statements (no. 1–4) given above by writing down the statement number(s) in the space provided. One statement may be used for both printers.

Inkjet Printer:

Statement number(s):

Laser Printer:

Statement number(s):

(2)

3.7.2 Andrew intends to print 10 000 copies of a single-page A4 leaflet.

State whether he should use an inkjet or a laser printer.

(1)

3.7.3 When Andrew wants to make small-scale 3D models of the company logo, his employer wants to understand how a 3D printer works to produce them.

Explain how a 3D printer produces 3D models.

(2)

- 3.8 While searching for images for his leaflets, Andrew came across the picture shown below, but he is uncertain what the picture means.



Figure 1

[<<https://www.analyticsinsight.net/>>]

- 3.8.1 What type of software does the picture refer to?

(1)

- 3.8.2 Explain **TWO** differences between the software displayed in the image illustrated above.

Difference 1:

(1)

Difference 2:

(1)

[23]

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

A company operates multiple offices and uses the Internet to transfer data between offices. This company also makes payments to staff and suppliers using online banking.

4.1 The company is worried about spyware and other security issues related to Internet usage.

4.1.1 Explain what is meant by spyware.

(2)

4.1.2 How does spyware differ from phishing.

Spyware:

Phishing:

(2)

4.2 When conducting online banking, the company accesses the online banking platform through a webpage.

4.2.1 Identify **ONE** method that could be used by the online banking platform to reduce the risk of spyware when logging on.

(1)

4.2.2 Explain how the above identified method prevents the threat of spyware.

(1)

- 4.3 To assist confused employees with Internet terminology, complete the missing parts in the following table for their reference.

Term	Description
HTML	
	The type of software application used to display a web page.
	An address given to a computer, by a network, to allow the computer to be uniquely identified.
	A text file sent by a web server to collect data about a user's browsing habits.
ISP	

(5)

- 4.4 Caching is one of the features that help us to use the web more efficiently.

- 4.4.1 Briefly explain what caching is.

(1)

- 4.4.2 Give **TWO** main reasons for using web cache.

Reason 1:

(1)

Reason 2:

(1)

- 4.5 The company uses video conferencing to communicate with each other over a network.

One of the staff members consistently encounters poor video quality during conferencing sessions, characterised by frequent disruptions in the video feed (the picture keeps 'breaking up').

Suggest **TWO** long-term solutions for this problem.

Solution 1:

(1)

Solution 2:

(1)

- 4.6 The company is interested in implementing grid computing. However, some employees are unfamiliar with this concept. Explain to them what grid computing is.

(2)
[18]

MARKER'S USE ONLY:	Total mark Q4	
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QUESTION 5 INFORMATION MANAGEMENT**Figure 2**

During the Rugby World Cup in 2023, the coaches and referees were very concerned regarding the impact of the game on the players. One such concern was the amount of head injuries.

World Rugby has been at the forefront of using new technology to manage head injury as part of its ongoing six-point plan to become the most progressive sport in the world on player welfare. To this end, World Rugby is implementing smart mouthguards equipped with in-game alerts designed to detect high acceleration events that may lead to concussion.

[Source: <<https://www.world.rugby/news/875212/world-rugby-integrates-smart-mouthguard-technology-to-the-head-injury-assessment-as-part-of-new-phase-of-global-player-welfare-measures>>]

- 5.1 As the smart mouthguards are a recent addition, many clubs need to do some research on the product.

Give **TWO** tips how to check that information sourced from the Internet is in fact correct and reliable.

Tip 1:

(1)

Tip 2:

(1)

5.2 Explain what each of the following terms mean:

5.2.1 Copyright

(1)

5.2.2 Plagiarism

(1)

5.3 Explain the process of how data is collected using the smart mouthguard by answering the following questions.

5.3.1 During gameplay, what type of data will the smart mouthguard receive from the players?

(1)

5.3.2 Explain how the input given in Question 5.3.1 will be processed to get useful information.

(1)

5.3.3 Give an example of the output that will be produced from the discussion in Question 5.3.2.

(1)

5.4 The coaches aim to monitor the performance statistics of every player during games. To accomplish this, spreadsheets are frequently used for data analysis. One way to present this information is through graphical representation.

State **THREE** ways in which a chart/graph can be made easier to interpret when it is included in a report.

Way 1:

(1)

Way 2:

(1)

Way 3:

(1)

[10]

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

- 6.1 Discuss **ONE** example in your school where using computers could accomplish these goals:

Saving paper:

(1)

Saving on communication cost:

(1)

Saving time:

(1)

- 6.2 A common term associated with computer crimes is social engineering.

6.2.1 Explain the term social engineering.

(1)

6.2.2 An aspect of social engineering is reverse social engineering.

Discuss **TWO** examples of scenarios where reverse social engineering could occur.

Example 1:

(1)

Example 2:

(1)

- 6.3 Companies are dependent on computers, and if they experience any hardware or Internet connection failure, it might have some devastating effects.

List the **TWO** most common problems that causes hardware failure.

Problem 1:

Problem 2:

(2)

- 6.4 Technology also plays a huge role in society.

Discuss **TWO** advantages and **TWO** disadvantages of the use of technology in society.

Advantage 1:

Advantage 2:

(2)

Disadvantage 1:

Disadvantage 2:

(2)

6.5 A firewall can be used to help keep the data secure that is stored on a computer.

The given paragraph describes how the firewall operates to help keep the data secure.

Complete the paragraph using the most appropriate terms from the given list.

NOTE: **Not all** the terms on the list need to be used.

- Accept
- Hacking
- Input
- Network
- Outgoing
- Output
- Processor
- Reject
- Software
- Storage

A firewall can be _____ or hardware based. It monitors traffic between the computer and the _____. The user sets criteria for the traffic. The firewall will _____ or _____ the traffic based on this. It can help prevent _____ and malicious software that could be a threat to the security of the data.

(4)

[16]

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

- 7.1 One of your teachers received a file in an email. He cannot open the file that he received as an attachment.

Explain **TWO** ways in which he may be able to open the document.

Method 1:

(1)

Method 2:

(1)

- 7.2 The same teacher discovered that the word processing program has a feature that automatically allows you to add captions to pictures, graphs, or tables.

Give **TWO** reasons, other than saving time, why it is better to use this feature than to do it manually.

Reason 1:

(1)

Reason 2:

(1)

7.3 How does a function in a spreadsheet differ from a formula?

Function:

(1)

Formula:

(1)

7.4 Some of the teachers are inputting their marks (as percentages) into a database. It is noticed that when they enter their marks that some marks are higher than 100.

7.4.1 Explain how a validation rule can assist the teachers in entering the marks correctly.

(1)

7.4.2 Give the actual validation rule you would use as part of your answer.

(1)
[8]

MARKER'S USE ONLY:	Total mark Q7	
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75 marks

SECTION C**QUESTION 8 INTEGRATED SCENARIO****Figure 3**

Some hotels are disrupting SA's hospitality sector after securing cutting-edge technologies to create a streamlined guest experience. They use artificial intelligence-based humanoid robots that deliver room service to guests and work as concierge attendants or waiters. Lexi, Micah, and Ariel were introduced at one of South Africa's hotels to lend a helpful hand to the human staff at the property. They can offer room service, provide travel information, and carry up to 165 pounds of luggage each from the marble-floored lobby to the rooms.

The list of tech innovations includes a remote digital booking and check-in service, app-based door keys, and guests can also listen to their favourite song played by a digital grand piano upon their request.

Hotel robots provide a competitive edge over the competition. Robots can free up the time of human staff and help personalise a guest's stay. In fact, their use is almost limitless with just imagination and cost being the limiting factor.

[Source: <<https://www.itweb.co.za/article/robots-deliver-room-service-at-sas-smartest-hotel/Olx4z7kn5GWv56km>>,<<https://www.socialtables.com/blog/hospitality-technology/hotel-brands-robot/>>]

- 8.1 During the check-in process guests receive a mobile key that uses a digital key linked to the guest's mobile device through a secure connection. This enables the guests to access their room by simply communicating with the lock on the door using their mobile device.

Which technology allows you to be able to use this mobile key, besides RFID?

(1)

8.2 Other hotels make use of RFID technology for hotel room key cards that enable guests to enter their rooms.

8.2.1 Expand the acronym RFID.

(1)

8.2.2 Explain how this technology works.

(2)

8.3 When guests interact with the robots, they make use of facial recognition to determine whether a guest is happy or unhappy.

8.3.1 What technology do we refer to for robots to be able to interpret a person's facial expressions?

(1)

8.3.2 Discuss another example where this type of technology is used.

(1)

8.4 The hotel makes use of information points.

- Visitors use a menu to select information about the hotel.
- The menu includes all information regarding the services offered at the hotel.
- The information is provided only using high-definition video with an audio track.

8.4.1 State **ONE** input device that could be used for the information point.

(1)

8.4.2 The output is shown on a monitor.

State **ONE** other output device that could be used for the information point.

(1)

- 8.4.3 A good Internet connection is an important requirement at this information point.

Give **ONE** reason why the hotel should make use of a fibre connection rather than an ADSL connection besides the fact that it is faster.

Reason:

(1)

- 8.4.4 The hotel decides to introduce Quick Response codes in different places in the hotel. These provide further information about the services offered at the hotel.

Describe how customers obtain the information from the Quick Response codes.

(3)

- 8.5 All the guests' information is saved in a database on a server. The database administrator needs to set up the database and requires a primary key.

- 8.5.1 What is a primary key?

(2)

- 8.5.2 Give an example of the guests' information that could be used as a primary key.

(1)

8.6 The hotel would like to get feedback from their guests as they would like to improve their services. They decided to make use of an online survey.

8.6.1 Discuss **TWO** advantages of using online surveys to gather information.

Advantage 1:

(1)

Advantage 2:

(1)

8.6.2 Name the control field that will be appropriate when creating an electronic form where the user must choose between two options.

(1)

8.7 Three types of storage media that may be used by the hotel are magnetic, optical and solid state.

8.7.1 One example of solid-state storage is a Solid-State Drive (SSD).

Identify **ONE** other example of solid-state storage.

(1)

8.7.2 A mobile device used by the hotel uses an SSD as secondary storage.

Give **TWO** reasons why an SSD is the most suitable secondary storage for their mobile device.

Reason 1:

(1)

Reason 2:

(1)

- 8.7.3 Another type of storage is cloud storage. Discuss **TWO** advantages for the hotel when considering the use of cloud storage.

Advantage 1:

(1)

Advantage 2:

(1)

- 8.7.4 The hotel makes use of a USB connection to transfer data onto their external hard drive. One benefit of using a USB connection is that it is a universal connection.

State **TWO** other benefits of using a USB connection.

Benefit 1:

(1)

Benefit 2:

(1)
[25]

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

The staff at the hotel needs some assistance with some general admin tasks to be completed on the computer. Assist them by answering the following questions:

- 9.1 How could a word processing document be saved so that the text can be edited on another computer that does not have that program installed?

(1)

- 9.2 What is the purpose of inserting section breaks in a word processing document?

(1)

- 9.3 How do you convert an endnote to a footnote?

(2)

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

- 9.4.1 Why is this not a good idea to move the headings in this way?

(1)

- 9.4.2 Propose a way to do this correctly.

(1)

- 9.5 The following extract represents information related to the guests who will make use of the hotel while on holiday. In the spreadsheet below, in column E, the room number starts with the floor number followed by the specific room number.

	A	B	C	D	E
1	Guest information				
2	Name	Surname	Check in	Check out	Room number
3	Sarah	Johnson	11-Oct	15-Oct	305
4	Michael	Chang	05-Nov	10-Nov	212
5	Emily	Patel	20-Oct	24-Oct	403
6	David	Rodriguez	10-Oct	14-Oct	231
7	Sophia	Lee	01-Nov	04-Nov	112
8	Nneka	Chukwuemeka	20-Oct	24-Oct	224
9	Jabari	Ndlovu	28-Oct	05-Nov	307

Figure 4

- 9.5.1 Suggest **ONE** way in which the names of the guests staying on the 2nd floor can be extracted without copying each name separately.

(1)

- 9.5.2 The manager needs to have the same information which appears in the spreadsheet, in a database application.

Which feature of an Office package can he use to achieve this?

(1)

- 9.5.3 Why is the SUMIF function not suitable for determining the number of guests that stayed on the 2nd floor?

(1)

- 9.6 ROUND is a function in a spreadsheet to round off numbers nearest to the number after the decimal place.

Explain the difference between ROUNDDOWN and ROUNDUP by giving the possible outcome of the following example below:

=ROUNDDOWN(4.87;1):

Answer:

=ROUNDUP(2.3;0):

Answer:

(2)

9.7 A database contains the surnames and names of guests.

The following criterion appears in the Surname field as a database query: "Like Smi*"

9.7.1 Give the term used to describe the asterisk (*) when used in the criterion.

_____ (1)

9.7.2 Give the purpose of using the asterisk in the query "Like Smi*".

_____ (2)

9.8 The technologies mentioned in the scenario refers to 4IR.

9.8.1 Expand the acronym 4IR.

_____ (1)

9.8.2 Give **TWO** more examples of technologies of 4IR.

_____ (2)

9.9 With the new technologies Windows 10 recommends not to turn off automatic system updates.

9.9.1 Give **TWO** reasons why software developers release updates.

Reason 1:

_____ (1)

Reason 2:

_____ (1)

- 9.9.2 State **TWO** potential disadvantages of not being able to disable automatic updates.

Disadvantage 1:

(1)

Disadvantage 2:

(1)

- 9.10 The hotel needs an entry-level computer for some administrative tasks in the office.

Complete the missing specifications of an entry-level computer that could be used by the admin staff. Write the answer in the space provided by referring to the example given in the 2nd row of the table.

Computer Specifications	
Example: Monitor	17" LCD display
(a)	Celeron
(b)	8 GB
(c)	802.11

(3)

- 9.11 The hotel offers their guests free Wi-Fi connectivity.

A general crime people commit is using unsecured Wi-Fi Internet connections without permission.

What term is used to describe this crime?

(1)
[25]

MARKER'S USE ONLY:	Total mark Q9	
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50 marks

Total: 150 marks

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]