PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 32 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, such as explain, name, select, discuss and identify; and 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 CORRECTION FLUID.**

10. Two blank pages (pages 31–32) are included at the end of the paper. If you run out of space for a question, use these pages and clearly indicate the question number of your answer.

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FOR OFFICE USE ONLY: MARKER TO ENTER MARKS

<table>
<thead>
<tr>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
<th>Q6</th>
<th>Q7</th>
<th>Q8</th>
<th>Q9</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td>15</td>
<td>10</td>
<td>22</td>
<td>17</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>18</td>
<td>32</td>
<td>/150</td>
</tr>
</tbody>
</table>
SECTION A

QUESTION 1

1.1 Choose the word(s) in Column B that best describe(s) the definition in Column A. Write the letter of your choice next to each question number in the space provided, for example 1.1.1 M.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1 A legal contract between a computer user and a software company.</td>
<td>A. convergence</td>
</tr>
<tr>
<td>1.1.2 A series of actions/keystrokes a user creates and records to automate repetitive tasks to save time.</td>
<td>B. spyware</td>
</tr>
<tr>
<td>1.1.3 A utility program that makes more storage space available.</td>
<td>C. AUP</td>
</tr>
<tr>
<td>1.1.4 Software that is downloaded without your permission when you are on the internet and then bombards you with unwanted information.</td>
<td>D. freeware</td>
</tr>
<tr>
<td>1.1.5 Brings various functions together in one device.</td>
<td>E. micro</td>
</tr>
<tr>
<td></td>
<td>F. adware</td>
</tr>
<tr>
<td></td>
<td>G. compatibility</td>
</tr>
<tr>
<td></td>
<td>H. defragmentation</td>
</tr>
<tr>
<td></td>
<td>I. macro</td>
</tr>
<tr>
<td></td>
<td>J. EULA</td>
</tr>
<tr>
<td></td>
<td>K. SSD</td>
</tr>
<tr>
<td></td>
<td>L. disk clean-up</td>
</tr>
</tbody>
</table>

WRITE YOUR ANSWER 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 the letter of your choice next to each question number in the space provided.

1.2.1 Identify the spreadsheet function that is NOT used with text data.

A UPPER  
B COUNT  
C LEN  
D FIND

1.2.2 Which one of the following statements concerning data structures is true?

A A field consists of a group of related records.  
B A field consists of a group of files.  
C A database consists of the data fields for a single application.  
D A record consists of a group of related fields.

1.2.3 A ... connects two branches of a company located in two separate suburbs in the same city.

A WLAN  
B GAN  
C MAN  
D SAN

1.2.4 Which one of the following statements on the use of the Windows Firewall is false?

A It can compile a security log of all the attempts to access your computer.  
B It detects any viruses and worms on your computer and deletes them.  
C When you are busy with an instant message and someone wants to send a file or photo to you, it could ask you whether the firewall should be turned off for that connection.  
D It forms a barrier between your computer and incoming traffic from the network or internet.
1.2.5 An internet game that allows the player to create characters that live a different or alternative life is known as …

A virtual life.
B parallel life.
C unrealistic life.
D computer life.

1.2.6 An encrypted code that is attached to an e-mail message to verify the identity of the sender is called …

A a digital certificate.
B a digital handshake.
C digital convergence.
D a digital signature.

1.2.7 When a computer connects to a server to use resources, which one of the following roles does the computer assume?

A server computer
B storage computer
C client computer
D supporting computer

1.2.8 When a file is sent to a printer, it is normally placed in a queue; this process is called …

A waiting.
B buffering.
C multitasking.
D spooling.
1.2.9 Which one of the following errors refers to the #VALUE! error indicator in a spreadsheet?

A misspelling of a function name  
B reference to a deleted cell  
C multiplying a text value with a numeric value  
D dividing a numeric value by zero (0)

1.2.9

1.2.10 Which of the following statements will always be true regarding open-source software?

(i) It is free of charge.  
(ii) The source codes are made available.  
(iii) Changes to the source code can be made and distributed.  
(iv) It is distributed only with new computers.

A (i) and (ii)  
B (ii) and (iv)  
C (iii) and (iv)  
D (ii) and (iii)

1.2.10
QUESTION 2

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

2.1.1 The (VLOOKUP/CONCATENATE) function allows you to search for a value stored in an existing table in a spreadsheet.

2.1.2 A(n) (footnote/endnote) in a Word document is additional information placed at the end of a document, and linked by a number or symbol to the relevant text in the document.

2.1.3 When you work in a database program, field names used in an expression are placed between by (square brackets/round brackets).

2.1.4 If you want to add a vertical space above and below the data in an HTML table, you would need to use the (<table cellpadding>/<table cellspacing>) attribute.

2.1.5 A (video/sound) file has a .mov extension.

2.1.6 The sharing of applications and data storage over the internet is referred to as (grid/cloud) computing.
2.2 Expand the following acronyms.

2.2.1 GUI

2.2.2 HTML

2.2.3 URL

2.2.4 EFT

25 marks
## QUESTION 3  SYSTEM TECHNOLOGIES

3.1 Identify the images below and complete the table on the following page.

<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://www.123rf.com/photo_29462909" alt="Image 1" /></td>
<td>Image 1</td>
</tr>
<tr>
<td><img src="https://www.what-the-heck-is-that" alt="Image 2" /></td>
<td>Image 2</td>
</tr>
<tr>
<td><img src="https://www.ebay.co.uk/b/Combos/131511/bn_661681" alt="Image 3" /></td>
<td>Image 3</td>
</tr>
</tbody>
</table>

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1. https://www.123rf.com/photo_29462909
2. https://www.what-the-heck-is-that-
3. https://www.ebay.co.uk/b/Combos/131511/bn_661681
3.2 Laptops, smartphones, 2-in-1 devices, etc. may look different but they all have common functions. As an end-user, most of your time is spent using application software, system software and utility software.

Give **TWO** examples of how system software provides you with a basic level of security.

_________________________________________________________________________________

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(2)

3.3 When you discover that you have errors or problems on a flash disk, what type of troubleshooting utility software can be used to check and repair your flash disk?

_________________________________________________________________________________

(1)
3.4 Computers also need drivers to function effectively.

3.4.1 Explain what a *driver* is by referring to its main function.

(2)

3.4.2 Why do many plug-and-play devices not ask the user to install a driver?

(2)

3.5 When you purchase new application software, you may be required to have a product key.

3.5.1 What is a product key?

(1)

3.5.2 Give the main reason why software developers make use of product keys.

(1)

3.5.3 Give **ONE** reason why an end-user would need to make use of the product key.

(1)
3.6 Partitioning the hard disk on a computer is becoming more popular. Give **TWO** benefits users could get from partitioning their hard disks.

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(2)

3.7 You have done everything correctly when setting up your computer, but your computer does not want to boot up. Mention **TWO** steps you could take to solve the problem.

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(2)

[22]
QUESTION 4  INTERNET AND NETWORK TECHNOLOGIES

4.1 We live in a world where everything needs to be instant and information needs to be sent and received within seconds. In terms of the type of internet connection, most people would prefer broadband.

Clearly explain the difference between the terms broadband and bandwidth.

(2)

4.2 Being connected to the internet opens up many opportunities for digital communications that could save money, especially in the business world.

4.2.1 Give ONE example to explain how digital communication can save a company money.

(2)

4.2.2 Give the term that refers to the gap between demographics and regions that have access to modern information and communications technology, and those that do not have access or have restricted access.

(1)
4.3 Fibre internet connections in South Africa are becoming more common and affordable and are fast replacing ADSL connections.

Differentiate between the physical media that fibre and ADSL use to connect to the internet. Do not refer to the speed of the connection.

4.4 Presently, most companies, schools, universities and banks make use of computer technology by working on a network.

![Figure 1](image)

**Figure 1**

4.4.1 Identify the network topology illustrated in Figure 1.
4.4.2 Give **TWO** advantages of this network topology.

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(2)

4.4.3 Give **TWO** limitations of this network topology.

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(2)

4.5 You need some basic hardware components to connect to a network. Briefly explain the function of each of the following components normally associated with a network.

4.5.1 NIC

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________________________________________________________________________

(1)

4.5.2 Switch

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________________________________________________________________________

(1)
4.6 A technician setting up a network should know the different protocols available for data transfer.

4.6.1 What is meant by the term *protocol*?

(1)

4.6.2 Describe what happens to a file when the *File Transfer Protocol* is used to share data over a network.

(2)

MARKER'S USE ONLY: Total mark

Q4
New smartphone driving app set to rev up driving standards in South Africa

"When people think of the relationship between smartphones and driving, their first thought is often negative. We want to change this perception by demonstrating that smartphone telematics can be a powerful tool to improve driver behaviour and road safety," says Anton Ossip, Chief Executive Officer of Discovery Insure.

The Discovery Insure app uses a smartphone's accelerometer and GPS to provide a driver with detailed driving information.

5.1 You recently bought a new car and approached Discovery Insure to insure your vehicle. You were required to install a tracking sensor and download the Discovery Insure driving app. Before you drive, you need to pair your phone to the tracking sensor via Bluetooth. This ensures that your driving performance can be recorded by the driving app.

5.1.1 As you start driving, you notice that there is no activity on the driving app that records your trips. Assuming your phone is on, the app is working and the tracking sensor is paired via Bluetooth, what could still be the cause of the trip not being recorded?

________________________________________________________________________

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________________________________________________________________________

(1)

5.1.2 Once you have identified the problem and fixed it, you are all set to continue your journey. At the end of your journey, list THREE features of your driving or your journey on which you could expect to receive information.

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(3)
5.2 Give **TWO** examples of information which Discovery Insure could provide a driver.

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(2)

5.3 Apart from giving feedback to their customers regarding their driving behaviour, Discovery Insure can use the collected data in other ways. Name **TWO**.

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(2)

5.4 Some customers complained about the statistical feedback given by the Discovery app as they felt that the information was not reflecting the truth, due to external factors that influenced their driving pattern on a given trip.

Identify **TWO** external factors that could influence a driver's behaviour on a given trip.

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(2)
QUESTION 6 SOCIAL IMPLICATIONS

6.1 You recently joined Monte Casino's Entertainment Twitter platform as you would like to be informed about upcoming events and shows in 2019.

6.1.1 What is Twitter?

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________________________________________________________________________

(2)

6.1.2 Why would Monte Casino use Twitter rather than Facebook to announce upcoming events?

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________________________________________________________________________

(2)

6.1.3 Give the term for the practice when somebody, for example, opens an online account using another person's details.

________________________________________________________________________

(1)

6.2 We live in a world where criminals have always existed and it would be unrealistic to think that people would not come up with ways to use computers to carry out criminal activities.

Define the term social engineering in the context of information security. Why would anybody use this type of social engineering?

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(2)
6.3 Most schools use email as the main method of communicating with other schools and with parents.

6.3.1 Power failures are often experienced due to load shedding. Despite these power failures, emails that were sent by a school still reach the recipients. How is this possible? In your answer you need to refer to the process whereby email is sent and received.

(2)

6.3.2 Explain how an educator at the school will send an email to the parents of his/her register class with important information, without parents knowing to whom the same email was sent.

(1)

6.3.3 Explain what a mailing or distribution list is in the context of email communication.

(1)

6.3.4 State ONE advantage of using a mailing or distribution list in email communication.

(1)
QUESTION 7  SOLUTION DEVELOPMENT

Stark Industries⁶ wants to ensure that their employees receive a 7% salary increase for 2019. Staff who have been employed for 24 years or longer will receive a once-off incentive bonus of R30 000 and those who have been employed for less than 24 years will receive R20 000. Pepper Pots, the CEO of Stark Industries, needs to ensure that the secretary calculated the information correctly.

7.1 The spreadsheet in Figure 2 represents the information of the management staff of Stark Industries.

![Figure 2](https://turundarilangit15.blogspot.com/2018/07/stark-industries.html)

7.1.1 In order for Pepper Pots to easily identify the employees who have been at Stark Industries for at least 24 years, the secretary shaded the information as indicated in Column D. Which automatic technique did the secretary use to do this?

(1)

7.1.2 In column E, Pepper Pots' monthly salary is displayed as a monetary value. What should the secretary do to display the values in E12:E22 correctly?

(1)

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7.1.3 Write down the formula to calculate the 7% increase in Column F.

\[ \text{Formula} \]

7.1.4 The incentive bonus was calculated using an *IF* function:

For example: \( = \text{IF}(D10>=24,30000, \text{IF}(D10<=23,20000)) \)

What is this type of *IF* function called?

\[ \text{Type of IF function} \]

7.2 Stark Industries currently employs over 2000 workers excluding the management staff. Pepper Pots wants to give each employee a personalised letter to thank them for their hard work and commitment to Stark Industries. The secretary wants to type out each letter individually; however, she should rather use the *mail merge* option that is available in any basic word-processor program.

Explain how mail merge works by referring to the steps you would follow from starting the mail merge to having the letters ready for distribution.

\[ \text{Steps of mail merge} \]
7.3 The secretary recently worked on capturing and collecting the data as requested by Pepper Pots. However, this information needs to be integrated into other office application packages, for example a spreadsheet, database and presentation application package.

7.3.1 Without retyping or recapturing information, list **TWO** methods the secretary can use to integrate information between the office application packages.

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(2)

7.3.2 How would the secretary calculate and display the number of records in a database report?

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(2)

[14]

75 marks
SECTION C

QUESTION 8 INTEGRATED SCENARIO

Exotic Zoo Wildlife Park is an exciting interactive community zoo in Telford. We also do educational workshops, children's parties and animal-assisted therapy.  

8.1 The Exotic Zoo Wildlife Park's Facebook page had been in an excellent working condition for a long time. Recently some problems occurred. The zoo manager started troubleshooting.

Outline TWO possible reasons why the online social networking system is running slowly, assuming that there are no viruses.

(2)

8.2 Online social networking is absolutely vital to the Exotic Zoo Wildlife Park, as this forms part of their marketing campaign.

Define the term social networking.

(2)

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7 https://twitter.com/exoticzoo?lang=en
8.3 The Exotic Zoo Wildlife Park needs to keep track of the health and dietary requirements of all the reptiles and exotic animals. The owner uses a database program for this. When designing the basic table structure of the database table, it is important to know for what the database is going to be used.

Referring to the scenario, explain each of the following terms associated with creating a database table structure and give an example of each.

8.3.1 Primary key

8.3.2 Input mask

8.3.3 Validation rule

8.4 Give two reasons why a form is a better option for data capturing than a table.
8.5 Apart from a table and form that can be used in a database program, the use of a query and a report is just as important when giving feedback.

Give **TWO** advantages to using a report for displaying information for information management.

8.6 Once a year the manager would like to display the weight and growth of his reptiles and exotic animals by capturing it on a graph. Graphs are usually used to compare data, to identify patterns and to make predictions. For these reasons a graph must be easy to read and interpret.

Give the manager **TWO** tips he needs to consider when he creates his graphs.

8.7 The zoo manager is interested in buying an ergonomically designed keyboard. Give **TWO** reasons why this is a good idea.
QUESTION 9  INTEGRATED SCENARIO (continued)

9.1 The Exotic Zoo Wildlife Park is categorised as a small office/home office business. The manager prefers to use one desktop computer that is connected to a printer and to the internet to receive emails and to interact with the community.

9.1.1 Does the zoo manager need a server? Motivate your answer.

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(2)

9.1.2 Keeping the scenario in mind, compare the use of a laptop computer vs. a desktop computer by referring to the processing speed and the potential to upgrade.

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(4)

9.1.3 One of the employees is trying to convince the zoo manager to use a laptop computer rather than a desktop computer. Give the TWO main advantages of using a laptop over a desktop computer.

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(2)
9.2 The zoo manager saw the following Apple iMac advertisement on takealot.com.

Apple iMac\(^8\) with Retina 4K display Intel Core i5 3.0 GHz quad-core @ R12 799

**Display:**
- Retina 4K Display

**Processor:**
- 3.0 GHz quad-core Intel Core i5 (Turbo Boost up to 3.5 GHz)

**Memory:**
- 8 GB of 2400 MHz DDR4 on-board memory

**Storage:**
- 1 TB (5400 rpm) hard drive

**Connections and expansions:**
- 3.5 mm headphone
- SDXC card slot
- Four USB ports

**Wireless:**
- Wi-Fi
- 802.11 ac Wi-Fi wireless networking

**Bluetooth**
- Bluetooth 4.2 wireless technology

**macOS Sierra**

9.2.1 The zoo manager wants to know what the differences are between memory and storage. Explain the purpose of memory and storage in a computer.

________________________________________________________________________

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________________________________________________________________________

(2)

9.2.2 What is the SDXC card slot used for?

________________________________________________________________________

(1)

\(^8\) https://www.takealot.com/apple-imac-21-5-retina
9.2.3 What does *quad core processor* mean?

__________________________________________________________________________

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__________________________________________________________________________

(2)

9.2.4 List **THREE** hardware devices that can be connected to the computer using a USB port.

__________________________________________________________________________

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(3)

9.3 The zoo manager installed and ran an antivirus program. The antivirus program found an infected file and sent a notification that the file had been quarantined.

9.3.1 Explain the term *quarantine*.

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(2)

9.3.2 Other than buying a new computer or hardware, what will you have to do if the antivirus program cannot remove malware from your computer?

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(2)
9.3.3 Describe the **TWO** main steps the zoo manager has to take to close a non-responsive application.

9.4 The zoo manager employed an administrative assistant who is deaf. Many hearing-impaired users rely on ICT for better communication.

9.4.1 What is meant by the term *ICT*?

9.4.2 Most email applications alert the user of an incoming email message by making a sound. What option is available to alert a deaf user to an incoming email?

9.4.3 Name the type of application that the administrative assistant can use to capture a lecture given by the zoo manager on how to care for reptiles and exotic animals so that it can be included in their monthly newsletter.

9.4.4 The zoo manager wants to make videos to be used on YouTube. What should he do to make the videos accessible to deaf users?
9.5 The assistant mentions to the zoo manager that there are proprietary software (bought software), OSS (open-source software) and shareware products available. Why would the administrative assistant consider using shareware? In your answer, explain what is meant by the term shareware.

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(2)

9.6 The zoo manager has a dot matrix printer and still believes this is the best option for his business. The administrative assistant recommends the use of a multifunction printer. Explain why a multifunction printer is better by comparing the multifunction printer to a dot matrix printer.

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(2)

9.7 A website needs to be created for the Exotic Zoo Wildlife Park.

Give TWO reasons why including the ALT attribute in the HTML code will benefit both sighted and partially sighted/blind people.

________________________________________________________________________

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(2)

[32]

MARKER'S USE ONLY: Total mark Q9

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.

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