TOTAL MARKS [ ]

NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2019

COMPUTER APPLICATIONS TECHNOLOGY: PAPER 1

EXAMINATION NUMBER [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Time: 3 hours   150 marks

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.

FOR OFFICE USE ONLY: MARKER TO ENTER MARKS

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	TOTAL
15	10	22	17	10	12	14	18	32	/150

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.

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

WRITE YOUR ANSWER HERE:

1.1.1	
1.1.2	
1.1.3	
1.1.4	
1.1.5	

(1)

(1)

(1)

(1)

(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

1.2.1	

   (1)

   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.

1.2.2	

   (1)

   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

1.2.3	

   (1)

   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.

1.2.4	

   (1)

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.

1.2.5	

(1)

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.

1.2.6	

(1)

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

1.2.7	

(1)

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.

1.2.8	

(1)

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)

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	

(1)
[15]

MARKER'S USE ONLY:	Total mark Q1	

QUESTION 2

2.1   Choose the most appropriate term/function (<u>underlined and given in brackets</u>) 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 (<u>VLOOKUP/CONCATENATE</u>) function allows you to search for a value stored in an existing table in a spreadsheet.

2.1.1	

(1)

     2.1.2   A(n) (<u>footnote/endnote</u>) 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.

2.1.2	

(1)

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

2.1.3	

(1)

     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 (<u><table cellpadding>/<table cellspacing></u>) attribute.

2.1.4	

(1)

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

2.1.5	

(1)

     2.1.6   The sharing of applications and data storage over the internet is referred to as (<u>grid/cloud</u>) computing.

2.1.6	

(1)

2.2   Expand the following acronyms.

    2.2.1   GUI

    _____
                                                                    (1)

    2.2.2   HTML

    _____
                                                                    (1)

    2.2.3   URL

    _____
                                                                    (1)

    2.2.4   EFT

    _____
                                                                    (1)
                                                                   [10]

                                                              25 marks
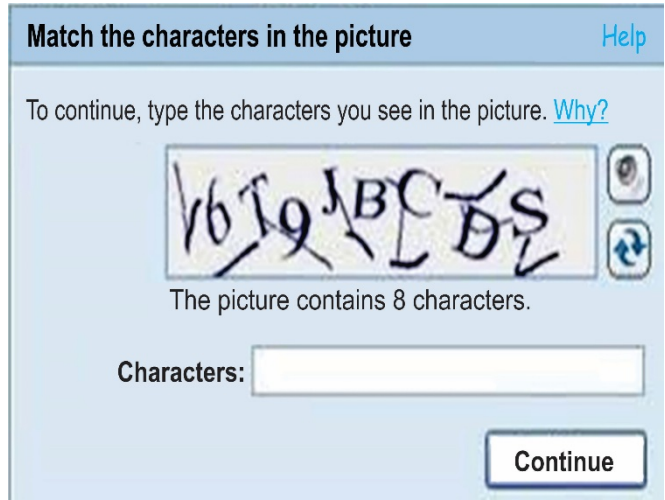
MARKER'S USE ONLY:	Total mark Q2	

SECTION B

QUESTION 3   SYSTEM TECHNOLOGIES

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

Match the characters in the picture   Help

To continue, type the characters you see in the picture. Why?

The picture contains 8 characters.

Characters:

Continue

3.1.1[1]

3.1.2[2]

3.1.3[3]

3.1.4[4]

---

[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
[4] https://pisces.bbystatic.com/image2/BestBuy_US/images/products/5711/5711723_.jpg

Question number	Name of hardware/software	Main function
3.1.1		
3.1.2		
3.1.3		
3.1.4		

(8)

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.

(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.

_____

_____

_____

_____
                                                                        (2)

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

_____

_____

_____

_____
                                                                        (2)
                                                                     [22]

MARKER'S USE ONLY:	Total mark Q3	

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.

_____

_____

_____

_____

(2)

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

Figure 1

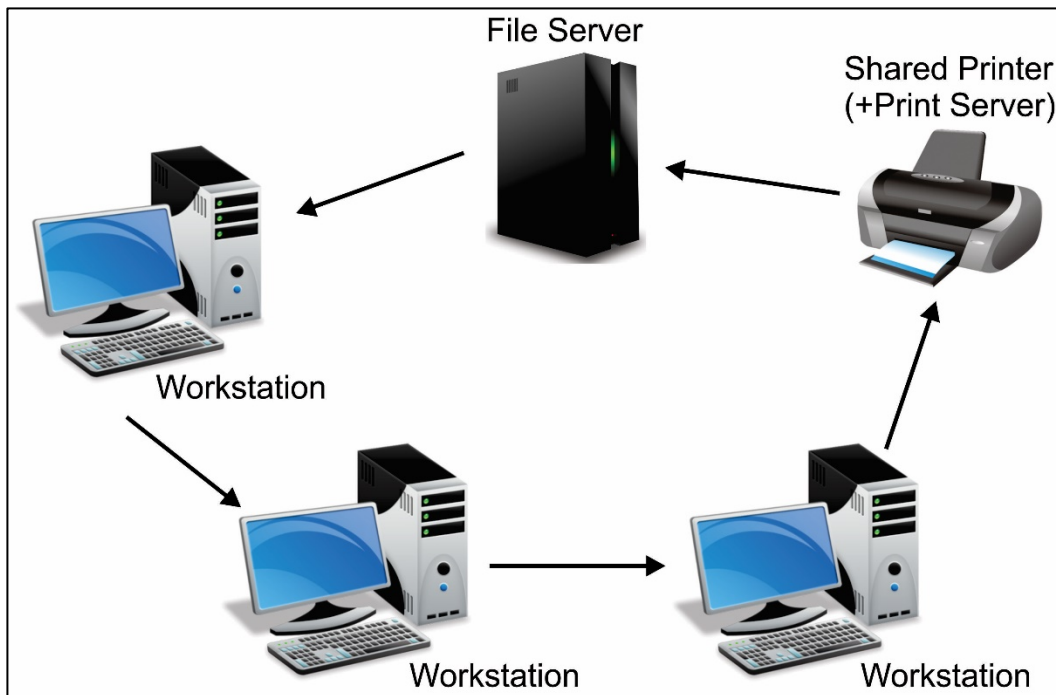4.4.1   Identify the network topology illustrated in Figure 1.

_____

(1)

4.4.2   Give **TWO** advantages of this network topology.

(2)

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

(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

(1)

4.5.2   Switch

(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)
            [17]

MARKER'S USE ONLY:	Total mark Q4	

QUESTION 5   **INFORMATION MANAGEMENT**

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]

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?

   _____

   _____

   (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.

   _____

   _____

   _____

   _____

   (3)

---

[5] http://www.insurancechat.co.za/2014-05/new-smartphone-/

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

_____

_____

_____

_____

(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**.

_____

_____

_____

_____

(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.

_____

_____

_____

_____

(2)
[10]

MARKER'S USE ONLY:	Total mark Q5	

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?

(2)

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

(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?

(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)

[12]

MARKER'S USE ONLY:	Total mark Q6	

QUESTION 7   SOLUTION DEVELOPMENT

Stark Industries[6] 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.

	A	B	C	D	E	F	G	H
1								
2								
3				2019 BUDGET				
4								
5				Established in				
6				1963®				
7								
8								
9								
10	Employee Name	Employee Surname	Title	Years of employment	Monthly Salary	Increase	2019 Salary	Incentive
11	Pepper	Pots	CEO	30	R200 000	R14 000	R214 000	R30 000,00
12	Kristin	Longfellow	Secretary	25	55000	R3 850	R58 850	R30 000,00
13	Obadiah	Stane	Executive Officer	27	60000	R4 200	R64 200	R30 000,00
14	Happy	Hogan	Head of Security	20	80000	R5 600	R85 600	R20 000,00
15	Dr Gray	Armond	Head Designer	14	154000	R10 780	R164 780	R20 000,00
16	Abe	Klein	Director of Engineering	19	167000	R11 690	R178 690	R20 000,00
17	Harmon	Furmintz	Head of Biochemical devision	24	144000	R10 080	R154 080	R30 000,00
18	Henry	Gritson	Research Scientist	17	90000	R6 300	R96 300	R20 000,00
19	Cherry	Wood	Scientist	23	120000	R8 400	R128 400	R20 000,00
20	Arwyn	Zurrow	Head of the Miami facilities	28	110000	R7 700	R117 700	R30 000,00
21	Yvette	Avril	Head of the French facilities	34	110000	R7 700	R117 700	R30 000,00
22	Eric	Sondheim	Medical Director	21	88000	R6 160	R94 160	R20 000,00
23								
24	Highest Paid Employer		R200 000,00					
25	2nd Highest Paid Employer		R167 000,00					
26								

Figure 2

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)

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

(2)

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

For example: = IF(D10>=24,30000, IF(D10<=23,20000))

What is this type of *IF* function called?

(1)

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.

(5)

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.

   _____

   _____

   _____

                                                                                    (2)

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

   _____

   _____

   _____

   _____

                                                                                    (2)
                                                                                   [14]

                                                                          ┌─────────────┐
                                                                          │ **75 marks** │
                                                                          └─────────────┘

              ┌──────────────────────┬──────────────┬─────────┐
              │ MARKER'S USE ONLY: │ Total mark   │   │
              │   │   Q7   │   │
              └──────────────────────┴──────────────┴─────────┘

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.[7]

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)

[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

(2)

8.3.2   Input mask

(2)

8.3.3   Validation rule

(2)

8.4   Give **TWO** reasons why a form is a better option for data capturing than a table.

(2)

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.

(2)

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.

(2)

8.7   The zoo manager is interested in buying an ergonomically designed keyboard. Give **TWO** reasons why this is a good idea.

(2)
[18]

MARKER'S USE ONLY:	Total mark Q8	

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.

   _____

   _____

   _____

   _____

   (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.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   (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.

   _____

   _____

   _____

   (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.

(2)

9.2.2   What is the *SDXC card slot* used for?

(1)

9.2.3   What does *quad core processor* mean?

(2)

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

(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*.

(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?

(2)

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

(2)

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*?

(1)

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?

(1)

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.

(1)

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?

(1)

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.*

_____

_____

_____

_____

(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.

_____

_____

_____

_____

(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.

_____

_____

_____

_____

(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.