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**TOTAL
MARKS**

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NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2021

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 34 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 this 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 action verbs in some of the questions, i.e. explain, name, select, discuss, identify, etc. and then 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. Writing in full sentences is required.
9. **DO NOT USE CORRECTING FLUID.**
10. Two blank pages (pages 33 and 34) are included at the end of the paper. If you run out of space for an answer, use these pages. Clearly indicate the number of your answer should you use this extra space.

FOR OFFICIAL USE ONLY:

MARKER TO ENTER MARKS BELOW									
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	TOTAL
15	10	22	17	10	12	14	25	25	/150
MARKER/MODERATOR TO INITIAL BELOW									

SECTION A**QUESTION 1**

- 1.1 Choose the word(s) in Column B that **BEST** describe(s) the definition in Column A. Write down **ONLY** the letter of your choice next to each question number in the space provided, for example 1.1.6 N.

	Column A	Column B
1.1.1	A term used in computing to describe a substitute for one or more characters in a search string.	A. Twitter
1.1.2	An example of a microblogging service.	B. Cloud computing
1.1.3	A service that provides online storage of data, anywhere and at any time.	C. ISP
1.1.4	A business that gives a client access to the Internet at a monthly cost.	D. Spooling
1.1.5	The process where documents are waiting in a queue to be printed.	E. Facebook
		F. Pharming
		G. Dropbox
		H. WhatsApp
		I. Wild card
		J. ADSL
		K. Boolean
		L. Multifunctioning
		M. Dial-up

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 down **ONLY** the letter of your choice next to each question number in the space provided, for example 1.2.11 D.

1.2.1 To correct the display on a monitor that appears to be the wrong size or out of focus, you would need to correct the ... of the monitor.

- A pixels
- B aspect ratio
- C brightness
- D resolution

1.2.1	
-------	--

(1)

1.2.2 The Excel function =SUM(A1:B2) will add together values in ...

- A cells A1 and B2.
- B cells A1, A2, B1 and B2.
- C cells B1 and B2.
- D all cells in column A and column B.

1.2.2	
-------	--

(1)

1.2.3 The process of getting data from a CSV file into an application is called ...

- A importing.
- B exporting.
- C copying.
- D compressing.

1.2.3	
-------	--

(1)

1.2.4 A cellular technology representing the generation of technologies that operate at speeds of up to 100 Mbps.

- A LTE
- B 3G
- C Wi-Fi
- D None of the above

1.2.4	
-------	--

(1)

1.2.5 When you create a profile on a social networking platform you can manage your username, password, and the way you receive notifications by using the ...

- A privacy settings.
- B profile settings.
- C account settings.
- D All the above settings.

1.2.5	
-------	--

(1)

1.2.6 There are many ways that computer crime can be committed. Identify the term generally associated with a kind of attack that damages the infrastructure of the Web itself.

- A Harassment attack
- B Spam attack
- C Denial of service attack
- D None of the above.

1.2.6	
-------	--

(1)

1.2.7 Which one of the following keyboard shortcuts would **NOT** change the content or layout of a Word document?

- A <Ctrl><Z>
- B <Ctrl><V>
- C <Ctrl><P>
- D <Ctrl><X>

1.2.7	
-------	--

(1)

1.2.8 Which one of the following database objects allows you to set a primary key?

- A Query
- B Report
- C Form
- D Table

1.2.8	
-------	--

(1)

1.2.9 Which one of the following devices is classified as both an input and an output device?

- A Visualizer
- B Headset
- C Scanner
- D Memory card

1.2.9	
-------	--

(1)

1.2.10 Which one of the following will give an error when entered in a spreadsheet cell?

- A =now()
- B =median()
- C =rand()
- D =today()

1.2.10	
--------	--

(1)

[15]

MARKER'S USE ONLY:	Total mark Q1	
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QUESTION 2

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

2.1.1 (MAN/LAN) is an example of a network that is spread over a city.

2.1.1		(1)
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2.1.2 A (blog/wiki) is a website that allows users to work together on changing its content, using a web browser.

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

2.1.3 To identify a person who is not a robot a (URL/CAPTCHA) identifying code can be used.

2.1.3		(1)
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2.1.4 When presenting information in a report you often use formatting such as bold and italics. To retain the formatting, you must save the file as an (.rtf/.txt) file.

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

2.1.5 The speed used to connect to a network is usually expressed in terms of (MB/Mbps).

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

2.1.6 The term used for additional data stored about a file, that describes the contents of the file, is referred to as (metadata/a path).

2.1.6		(1)
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2.2 Give an appropriate explanation that would **BEST** describe the following terms generally associated with the use of computer hardware/software:

2.2.1 Virus definition

(1)

2.2.2 Update

(1)

2.2.3 SD Card

(1)

2.2.4 Motherboard

(1)
[10]


MARKER'S USE ONLY:	Total mark Q2	
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25 marks


SECTION B**QUESTION 3 SYSTEM TECHNOLOGIES**

3.1 Complete the tables below by identifying the objects/items in the images and stating their main function.

3.1.1

 [< https://www.pcgamer.com-hardware-guide/ >]	
Name of hardware	(1)
Main function	
	(1)

3.1.2

 [< https://www.networkdrops.com/ >]	
Name of hardware	(1)
Main function	
	(1)

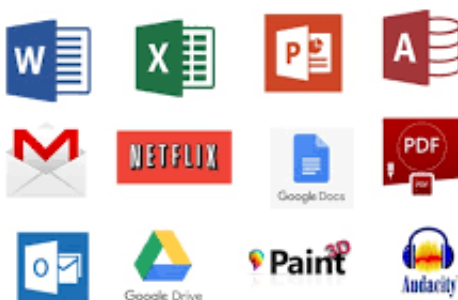
3.1.3



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

Name of device	(1)
Main function	(1)

3.1.4



[<<https://www.learncomputerscienceonline>>]

General name to describe the software	(1)
Main function	(1)

3.2 When you want to purchase a printer there are certain specifications that you need to keep in mind, to ensure that you purchase the right printer.

3.2.1 The monthly duty cycle of a laser printer is much greater than that of an inkjet printer. Explain the meaning of the term *monthly duty cycle*.

(2)

3.2.2 Give **ONE** advantage of a laser printer over an inkjet printer, apart from any cost issues.

(1)

3.3 Over a period of time files become scattered across your computer's hard disk drive.

3.3.1 A friend recommends that you format the disk as this will solve the problem. Why should you **NOT** follow his advice?

(1)

3.3.2 Recommend the type of software that can be used to minimise the scattering of files and explain how it works.

(a) Recommendation:

(1)

(b) How the software works:

(2)

3.4 Using ergonomically designed equipment is important to help prevent RSI.

3.4.1 Briefly describe the kind of actions taken by a computer user that can lead to RSI.

(1)

3.4.2 Identify **TWO** features of a keyboard that would make it 'ergonomically designed'.

(2)

3.4.3 Give **ONE** tip on how to prevent RSI, apart from using ergonomically designed equipment.

(1)

3.5 Due to current events many companies expect their employees to work from home. For this reason, it is advisable to have a webcam.

3.5.1 In a recent advert you noticed that a webcam has a specification of 1.3 MP. Explain why this specification is important.

(1)

3.5.2 Give **TWO** reasons why an employee may want to make use of a webcam when working from home.

(2)

[22]

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

The owner of a reptile rehabilitation centre needs to set up a network inside the perimeter of the centre. This network needs to connect with the main reception building. The owner has requested a wireless enabled multifunction printer that will be situated in the main reception building. Furthermore, each guide must have a wireless mobile device. The guides need to capture data about the reptiles' behaviour during the day. This recorded information then needs to be sent to the main reception building and in some cases this information must be printed.

- 4.1 Suggest a type of network connection that will ensure all connected devices can communicate with each other.

(1)

- 4.2 What is the primary purpose of a router in a network?

(1)

- 4.3 The owner is concerned about the security of the network.

- 4.3.1 State **TWO** precautions that he can take to prevent unauthorised access to the files on the network.

(2)

- 4.3.2 Identify **TWO** problems that the owner needs to be aware of that could directly relate to the loss of data, besides data theft or physical fire.

(2)

- 4.4 The owner wants to appoint a person who will assist with ensuring that all devices are connected. This person will also need to perform basic network tasks. Give the job title (designation) that should be used in the advertisement for such a person.

(1)

- 4.5 More and more people choose to use online, web-based e-mail systems.

- 4.5.1 Give the brand name of **ONE** popular web-based e-mail service.

(1)

- 4.5.2 State **TWO** possible advantages of using a web-based e-mail system, compared to using a local e-mail system through an ISP.

(2)

- 4.5.3 Which e-mail field can be used to hide the address of a recipient who gets a copy of the same e-mail sent to other recipients?

(1)

- 4.6 The centre would frequently like to stream videos. State **TWO** aspects or properties of an Internet connection that need to be considered for frequent streaming of videos in high definition.

(2)

4.7 A variety of plug-ins can be installed on web browsers.

4.7.1 Why would you use or need browser plug-ins?

_____ (1)

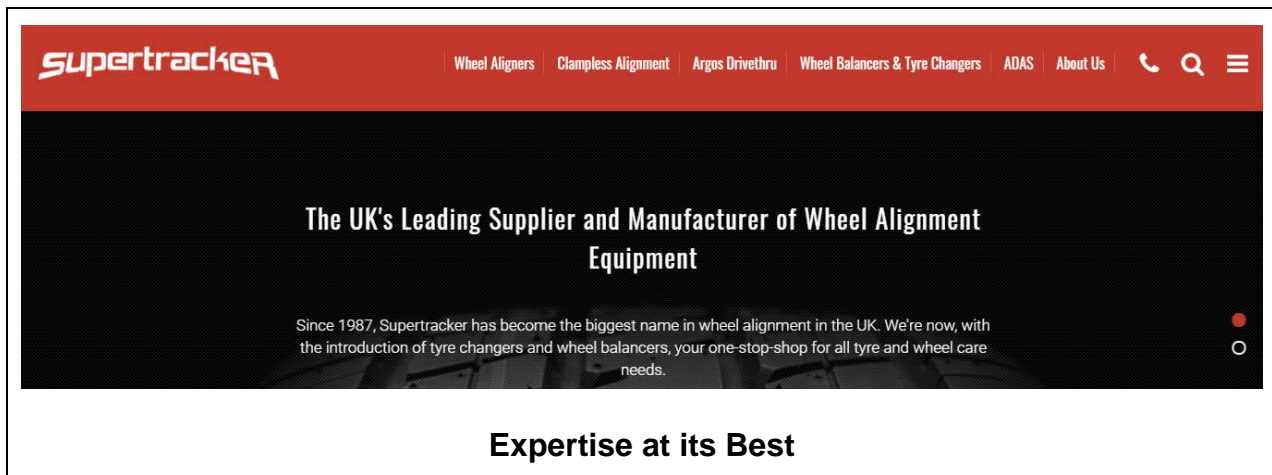
4.7.2 Give **TWO** examples of a browser plug-in. (You may use brand names in your answer.)

(2)

4.8 Identify the service generally known as a video sharing service that allows users to watch videos posted by other users and upload videos of their own. (Brand name allowed.)

(1)
[17]

MARKER'S USE ONLY:	Total mark Q4	
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QUESTION 5 INFORMATION MANAGEMENT[<<https://www.supertracker.com/>>]

5.1 Supertracker specialises in motor vehicle wheel alignment, fitting of tyres, shock absorbers and brakes.

5.1.1 When a customer arrives at Supertracker it is important that the correct data is captured. Assuming Supertracker is using a form that was created with a database, identify **TWO** types of techniques that can be used to ensure that the data being entered conforms to certain formats and/or rules.

(2)

5.1.2 Identify **TWO** types of data that could be crucial for the technicians when capturing the customer's data, apart from his/her name and contact details.

(2)

5.1.3 Supertracker cannot afford to make any mistakes when data is captured as people's lives are at stake. Give the acronym denoting the concept that what you capture on a computer could determine the outcome.

(1)

- 5.2 Supertracker uses Digitech Technology® when they work on the vehicles. This technology is *wireless* and uses *sensors* to ensure that communication takes place when the vehicles are placed on the wheel alignment hoist.



[<<https://interequip.wordpress.com/2015/06/08/wheel-alignment>>]

Using the headings given below explain the process that will be used to ensure that the vehicle's wheels are correctly aligned when the necessary equipment is placed on the wheels.

INPUT:

PROCESSING:

OUTPUT:

(3)

- 5.3 Supertracker needs to keep a record of the vehicles they have serviced and ensure that customers' personal information is safe.

Give **TWO** physical methods of protecting personal data stored on the server.

(2)
[10]

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

Over the past year online teaching played a huge part in education. The new way of assisting learners opened the world to many possibilities. This has made it possible for learners and educators to collaborate and communicate far more efficiently and effectively than before.

6.1 Many online communication and collaboration platforms were used to ensure that teaching still happened during the different lockdown phases of the pandemic.

6.1.1 Identify **TWO** online platforms that could be used in education to ensure successful collaboration and communication between learners and educators. (Brand names allowed.)

(2)

6.1.2 Most schools would need to draw up a set of guidelines that describe the rights and responsibilities of its users, especially to ensure that learners and educators only share appropriate information when communicating online. Give the general term for such a set of guidelines.

(1)

6.2 Give **THREE** ways you could use a computer in a more environmentally friendly way.

(3)

- 6.3 It may be necessary for learners to e-mail their educators and classmates to ask for some advice on a topic. Define the term 'netiquette' when sending an e-mail and give **ONE** example.

Definition:

(1)

Example:

(1)

- 6.4 Many people have physical disabilities, so several hardware devices have been developed to help to make computer use easier for them.

Suggest **TWO** hardware devices that will help learners who have motor control problems due to not being able to use their hands effectively.

(2)

- 6.5 While online teaching assists many learners and educators to ensure the learners' education continues, there is also the danger of certain computer crimes being committed. Some parents of the learners in the class want to know what the difference is between the following two computer crimes. Briefly explain the difference between the two terms.

6.5.1 Harassment:

(1)

6.5.2 Cyber-attack:

(1)
[12]

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

7.1 Indicate **ONE** way in which you can obtain online help when working in Word.

(1)

7.2 Give **ONE** advantage and **ONE** disadvantage of using draft mode to print a document.

Advantage:

(1)

Disadvantage:

(1)

7.3 Thuli checked her CAT PAT assignment and was disappointed as she lost marks for spelling errors, even after all the errors detected by Word's built-in spell checker had been corrected. Identify **TWO** reasons why some errors were not detected.

(2)

7.4 Which Access facility can one use to display only certain records in a table, besides using a query?

(1)

- 7.5 Thuli wished to calculate the average of the values of the Score field in an Access report.

She typed the following in a Label in the report footer:

=AVERAGE(Score)

Give **THREE** reasons why she will not get the answer she was expecting.

(3)

- 7.6 Name a feature of a spreadsheet program that can be used to automatically highlight cells if they contain specific values.

(1)

- 7.7 Which feature in a spreadsheet program can be used to display words below one another in the same cell?

(1)

- 7.8 During your CAT lessons you studied web page development.

- 7.8.1 What other coding language works with HTML5 to format the layout of a web page?

(1)

7.8.2 How does the function of a tag differ from that of an tag used in the code for a web page?

(2)
[14]

MARKER'S USE ONLY:	Total mark Q7	
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75 marks

SECTION C**QUESTION 8 INTEGRATED SCENARIO****Digital technology can help drug makers fight COVID-19**

Research has shown that investing in digital technology can boost the export performance of pharmaceutical companies. Digitalisation in manufacturing can raise productivity and output and thereby exports, while digital platforms can provide better access to new markets through online sales channels and digital marketing. Digital inventory management can further enable the use of valuable customer data in business models and can strengthen customer relationships through direct contact and quick communication. Technologies can reduce the cost of drug development, accelerate product development timelines, optimise drug and product design, and enable faster and more efficient monitoring of the drug development process. Digitising access control systems through facial recognition protects access to captured data thereby ensuring that the data stays confidential. With the help of digitalisation, online training in a range of subjects, from medical issues to soft skills, can be implemented. Therefore, to build a resilient sector that will thrive after COVID-19, such investment strategies must be implemented across the industry.

[<<https://www.weforum.org/agenda/2020/07/digital-technology-can-help-drug-makers-fight-covid-19/>>]

8.1 Many scientists and pharmacists across the world are working on a vaccine to help combat COVID-19.

8.1.1 Give the term generally associated with the system whereby the resources of different computers are shared and used at the same time to solve a single problem.

(1)

- 8.1.2 *Crowdfunding* was suggested by one of the scientists as this could help them pay for the initial funding of the research that needs to be done. Explain the term *crowdfunding*?

(2)

- 8.2 Scientists must have top-of-the-range computers to ensure that the best technology is used for researching the development of a vaccine for COVID-19. Consider the advert below and then answer the questions that follow:

Type	Item
CPU	AMD Ryzen 9 3900X 3.8 GHz 12-core processor
CPU Cooler	NZXT Kraken X62 Liquid CPU cooler
Motherboard	Gigabyte X570 AORUS XTREME EATX AM4
Memory	Corsair Vengeance LPX 64 GB (4 × 16 GB) DDR4-3200
Storage	Gigabyte AORUS NVMe Gen4 2 TB M.2-2280 NVME solid state drive
Video Card	Gigabyte GeForce RTX 2080 Ti 11 GB AORUS XTREME
Case	Corsair 760T Black ATX Full Tower
Power Supply	Corsair RMx (2018) 850 W 80+ Gold Certified Fully Modular ATX
Case Fan	Noctua NF-F12 PWM 54.97 CFM 120 mm
Keyboard	Das Keyboard Model S Professional Wired Standard Keyboard
Operating System	Windows 10

[<https://www.reddit.com/r/buildapc/comments/cljxqk/building_a_pc_for_scientific_computing/>]

- 8.2.1 The CPU has a 12-core processor. Explain the function of the 12-core processor **and** why it would be better to consider the 12-core processor rather than a dual- or quad-core processor?

(2)

8.2.2 Is an internal HDD generally considered to be primary memory or secondary storage?

(1)

8.2.3 The advertisement does not mention anti-virus software. Explain why the scientist should purchase anti-virus software. Give an example of anti-virus software. (You may use brand names in your answer.)

(2)

8.2.4 Keeping the scenario in mind, give **TWO** advantages of an SSD over an HDD **and** explain how each advantage will benefit the scientist.

Advantage 1:

How will it benefit the scientist?

Advantage 2:

How will it benefit the scientist?

(4)

8.2.5 Explain the function of a *video card*.

(1)

8.3 There are many scientists collaborating and working together.

8.3.1 Give **THREE** reasons why the scientists' files need to be backed up.

(3)

8.3.2 Suggest **TWO** considerations that scientists must make when backing up their work.

(2)

8.4 Identify the computer memory where any running program and its data are temporarily stored.

(1)

8.5 In the advert Windows 10 is recommended as the operating system. List **FOUR** of the main functions of an operating system.

(4)

- 8.6 Advances in mobile technologies have led to the development of sophisticated note-taking software. Give **ONE** advantage to scientists if using this software rather than writing down all their findings?

(1)

- 8.7 Apart from the fast and easy transferring of files between remote computers that are connected via the Internet, give **ONE** benefit to the scientists of using the File Transfer Protocol.

(1)
[25]

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

- 9.1 It is recommended that the scientists take regular breaks while doing research, to prevent injuries caused by extended computer use. Recommend **ONE** other option that can be considered to help prevent injuries.

(1)

- 9.2 The scientists need to gather information to assist with their research. A questionnaire will have to be created. In general, 'closed' questions (for example, where the answers can only be yes or no) should be asked, rather than questions where an opinion needs to be formulated.

- 9.2.1 Give **ONE** reason why a questionnaire works best if it contains 'closed' questions?

(1)

- 9.2.2 The following statement was made on page 24: 'Digitising access control systems through facial recognition protects access to captured data, thereby ensuring that the data stays confidential.'

Give the term used to describe this type of access.

(1)

- 9.3 Digital marketing requires a stable Internet connection.

Explain the following two concepts associated with an Internet connection.

- (a) Bandwidth:

(1)

- (b) Broadband:

(1)

9.4 The scientists decided to make use of a Quick Response (QR) Code to give feedback on the monitoring of the drug development instead of just giving a link to their findings.

9.4.1 Explain the function of a QR Code **and** give **TWO** requirements needed for the scientists to be able to gain access to the relevant monitoring information when using the QR Code.

Function of a QR Code:

(1)

Requirements:

(2)

9.4.2 Why could the use of an RSS website or news feed service be another option to consider when giving feedback on the drug development?

(1)

9.5 Many investors are interested in seeing how the scientists are working in developing the COVID-19 vaccine. For this reason, the scientists asked a web designer to create a website.

9.5.1 Give the name of the following HTML tag that is completely ignored by a browser: `<!--Connection medium-->`

(1)

9.5.2 The creator of the web page used the following HTML code to try to change how the text 'COVID vaccination' is displayed on the web page:

`<fontsize='12' colour='lightblue' face='Arail'>COVID vaccination `

Give **TWO** reasons why this HTML code will **NOT** display the text as the creator intended when the web page is viewed in a browser.

(2)

- 9.6 One of the investors visited the website and after a while complained that they cannot see regularly updated information. Assuming that there is nothing wrong with the webpage, what could be the cause of the webpage not updating?

(1)

- 9.7 All the research findings are saved in various types of files.

- 9.7.1 Consider the following terms generally associated with the saving of a file. Explain how the two file types differ.

- (a) Executable file:

(1)

- (b) Compressed file:

(1)

- 9.7.2 It is suggested that the scientists save their findings by making sure that their files are saved in compatibility mode.

Give **ONE** reason why the suggestion was made and **ONE** example of how they can save the files to be compatible.

Reason:

(1)

Example:

(1)

9.8 The scientists are working in the same building and would like to network their computers.

9.8.1 How would they achieve this? Give **ONE** example of hardware and software required to set up a network.

Hardware: _____ (1)

Software: _____ (1)

9.8.2 What is the function of a firewall in a network?

(1)

9.9 A journalist who needs to give feedback on the scientists' progress is working on a document that is five pages long. The whole document is currently in portrait format, but she wants just the middle page (page 3) to appear in landscape format. Briefly outline what she needs to do to get just page 3 to appear in landscape format.

Note: You do not need to refer to specific menu options, but rather describe the general steps she needs to follow.

(2)

9.10 Name the word processing feature that must be used before an automatic table of figures can be inserted in a document.

(1)

9.11 Which feature of a word processor can be used to create personalised documents in which the journalist can send the same basic information to all the investors?

(1)

9.12 The journalist needs to work with many articles. Suggest why it would be an option to typically insert the name of a document as a field in a document, rather than as 'normal' text?

(1)
[25]

MARKER'S USE ONLY:	Total mark Q9	
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50 marks

Total: 150 marks

**MARKERS'
USE ONLY**

ADDITIONAL SPACE (ALL questions)

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

[illegible]

**MARKERS'
USE ONLY**

[illegible]