



**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2021

COMPUTER APPLICATIONS TECHNOLOGY P2

MARKS: 150

TIME: 3 hours

This question paper consists of 17 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of:
SECTION A (25 marks)
SECTION B (75 marks)
SECTION C (50 marks)
2. Answer ALL the questions.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. Do NOT write in the right-hand margin of the ANSWER BOOK.
6. Leave a line after EACH subquestion.
7. Generally, one mark is allocated per fact; therefore, a 2-mark question would require TWO facts, etcetera.
8. Read the questions carefully. DO NOT give more than the question requires as this will NOT be marked.
9. All answers MUST be related to Computer Applications Technology.
10. Answers such as 'cheaper', 'slower'/'faster' and 'easier' will ONLY be accepted, if they are motivated.
11. Do NOT use brand names in your answers, unless specifically required.
12. Write neatly and legibly.

SECTION A**QUESTION 1: MULTIPLE-CHOICE QUESTIONS**

Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (1.1 to 1.10) in the ANSWER BOOK, for example 1.11 D.

- 1.1 A physically disabled person who cannot use the keyboard with ease, will benefit from using this specific program/software when he/she wants to type a letter on the computer.
- A Dragon Naturally Speaking
 - B MathPad
 - C Mouse skills
 - D CorelDraw
- (1)
- 1.2 What is the difference between upgrading of software and updating of the software?
- A There is no difference, in both cases you have to go online.
 - B For updating software like Word, you need a license number but for upgrading it is unnecessary.
 - C When you update software, you probably buy a newer version and when you upgrade, you download fixes.
 - D When you upgrade software, you probably buy a newer version and when you update, you download fixes.
- (1)
- 1.3 Which ONE of the data types in MS Access ensures that the field serves as a primary key?
- A Hyperlink
 - B AutoNumber
 - C OLE Object
 - D Memo/Long Text
- (1)
- 1.4 You want to use a function to search for a value that appears the most in a data range. The best function to use is:
- A VALUE
 - B IF
 - C MEDIAN
 - D MODE
- (1)

- 1.5 Sales or holiday bookings over the Internet are known as ...
- A e-commerce.
 - B Tweets.
 - C VoIP.
 - D Ergonomics. (1)
- 1.6 Once data has been collected, it must be processed. A spreadsheet is an ideal tool for analysing data. Which ONE of the features mentioned below does NOT contribute to the analysis of data?
- A Graphs/Charts
 - B Track changes
 - C Conditional formatting
 - D Functions and Formulas (1)
- 1.7 Which method/source would be the most suitable to use to gather information about residents' opinions on service delivery?
- A Survey
 - B Community (local) newspapers
 - C National newspapers
 - D Interviews (1)
- 1.8 The catch phrase "*It's criminal if it's not original!*" describes ...
- A the theft of intellectual property.
 - B hacking into a computer.
 - C software piracy.
 - D text encryption. (1)
- 1.9 Which ONE of the following is NOT a formula that is available for calculations in a Word table?
- A LEN
 - B SUM
 - C AVERAGE
 - D COUNT (1)
- 1.10 The overall design of an entire document including colours, fonts and effects, is known as ...
- A style.
 - B template.
 - C theme.
 - D autotext. (1)

[10]

QUESTION 2: MATCHING ITEMS

Choose a term/concept from COLUMN B that matches the description in COLUMN A. Write only the letter (A–T) next to the question numbers (2.1 to 2.10) in the ANSWER BOOK, for example 2.11 Q.

COLUMN A		COLUMN B	
2.1	The trend where separate technologies and functions that required different devices in the past are combined into a single device	A	grid computing
		B	fragmentation
2.2	It includes utility programs/software pre-installed onto your computer to help maintain the system	C	contrast ratio
		D	ppm
2.3	The total amount of data transferred from one point to another within a specific time span	E	administrative tools
2.4	Data identified on a website can be stored temporarily on the hard drive in a sub-directory of the browser and at the next session it is retrieved instead of opening the website via the Internet	F	dpi
		G	defragmentation
		H	em-dash
2.5	A collection of independent networked computers that act together to perform very large tasks	I	aspect ratio
2.6	A horizontal line, which is a little longer than a hyphen, used to express ranges and parenthetical expressions	J	digital divide
		K	caching
2.7	The different parts of the files can become scattered across the disk, causing the computer to become slower in retrieving the files in order to open or save them	L	bandwidth
		M	en-dash
		N	cloud computing
2.8	The ratio between the width and height of a screen	O	ISO
2.9	The specification in which the speed of a printer is measured	P	resolution
2.10	The setting on the camera for measuring the sensitivity to light	Q	disk cleanup
		R	NFC
		S	convergence
		T	ADSL

(10 x 1) [10]

QUESTION 3: TRUE/FALSE ITEMS

Indicate whether the following statements are TRUE or FALSE. Choose the answer and write 'true' or 'false' next to the question numbers (3.1 to 3.5) in the ANSWER BOOK. Correct the statement if it is FALSE. Change the underlined word(s) to make the statement TRUE. (Do NOT simply use the word 'NOT' to change the statement.)

NO mark will be awarded if only FALSE is written.

EXAMPLES:

QUESTION	ANSWER
Facebook is an example of a social networking website.	True
A NIC has slots for hardware components such as the CPU.	False – motherboard

- 3.1 A header is text that appears within the bottom margin of all pages in a document or file. (1)
- 3.2 A check box allows the user to choose only one from a given set of options. (1)
- 3.3 The wild card character can be used in the Find and Replace feature of a word processor. (1)
- 3.4 A hyperlink is a built-in connection to another related webpage or website, usually indicated as underlined text or graphics. (1)
- 3.5 An e-mail program may reject an attachment based on the date of the file. (1)
- [5]

TOTAL SECTION A: 25

SECTION B**QUESTION 4: SYSTEM TECHNOLOGIES**

- 4.1 Every general-purpose computing device needs both RAM (memory) and storage.
- 4.1.1 Briefly explain the function of RAM. (1)
- 4.1.2 Give ONE difference between RAM and storage, besides their difference in function. (1)
- 4.2 Give TWO input devices that are found in a smartphone, but not in a typical desktop computer. (2)
- 4.3 Give TWO reasons why portable computers are increasingly being designed NOT to include optical drives. (2)
- 4.4 You are working with a wired mouse that suddenly 'freezes' (fails to respond). Assume that the mouse itself is clean and not damaged.
- Give TWO trouble-shooting techniques you could try to get the mouse working again. (2)
- 4.5 Discuss TWO ways in which a user could ensure that data is not deleted or altered by mistake. (2)
- 4.6 Explain why business invoices, statements etcetera. are generally converted to PDF files before they are sent to customers. (1)
- 4.7 Give TWO limitations of data projectors for showing computer output, compared to normal monitors. (2)
- 4.8 Name TWO pieces of equipment one would need for VR (Virtual Reality). (2)
- 4.9 State ONE example of how VR (Virtual Reality) can be used, except for gaming. (1)
- 4.10 The IT learners are considering constructing a drone as part of an awareness drive for new technology. A 3D printer will be used to print the parts of the drone.
- 4.10.1 What is a *drone*? (1)
- 4.10.2 State TWO possible benefits of using a 3D printer for printing parts of the drone. (2)

4.11 A computer game has the following hardware system requirements:

Intel i3 (or higher) 8 GB of RAM DVD drive
--

4.11.1 Give the general function (in any computer) of the item specified as 'Intel i3'. (1)

4.11.2 Assuming that the DVD drive will only be used to install the game, briefly explain how one could install the game on a computer that does NOT have a DVD drive. (1)

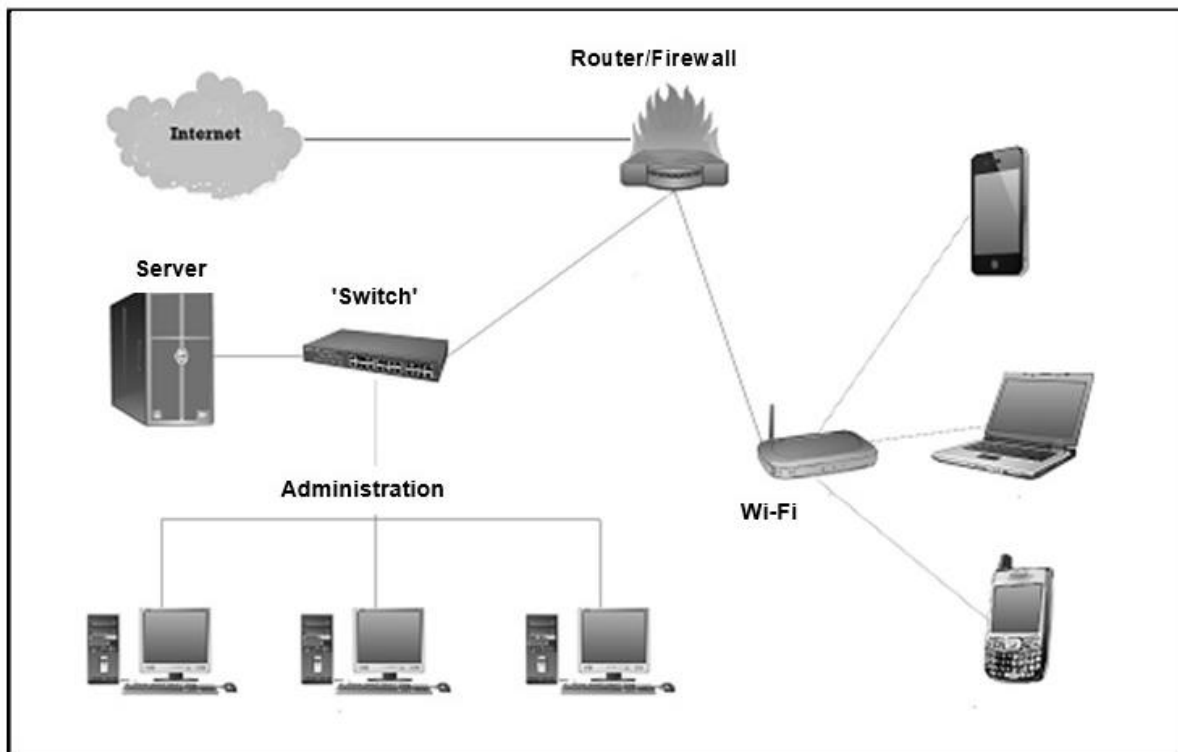
4.11.3 Give ONE other common hardware requirement, besides those listed above. (1)

4.12 State THREE advantages of SSDs. (3)

[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

The diagram below illustrates the network of a small business.



- 5.1 The computers in the cabled network are used by all staff members and the WLAN is used by clients. (1)
- 5.1.1 Give ONE reason why a wireless network is more suitable for the clients. (1)
- 5.1.2 Give ONE reason why all devices must have a unique IP address. (1)
- 5.1.3 Give TWO possible reasons why clients using the WLAN could experience slow connection speed sometimes. (2)
- 5.2 The LAN in the administration office uses a client-server model and provides internet access. (2)
- 5.2.1 Name TWO services that can be provided by an ISP besides the connection to the internet. (2)
- 5.2.2 State TWO benefits of using an ADSL connection. (2)
- 5.2.3 Explain the function of the switch as part of the LAN. (2)
- 5.3 The LAN to be used by the administration staff uses fibre-optic cables. (1)
- 5.3.1 What medium is used by fibre-optic cables to transmit signals? (1)

- 5.3.2 Give TWO reasons why fibre-optic cables will be more suitable for use in a LAN than UTP cables. (2)
- 5.4 Give TWO disadvantages of FTP technology for the transfer of larger files over the internet. (2)
- [15]**

QUESTION 6: INFORMATION MANAGEMENT

- 6.1 Refer to a formal written report, such as your PAT, and explain the purpose of a:
- 6.1.1 Task definition (1)
- 6.1.2 References (1)
- 6.2 When you did research for your PAT, you found some of the information on the topic appeared to be unsuitable.
- State TWO indications that some of the information found may not be accurate and cannot be used in your report. (2)
- 6.3 Closed questions have a set of answers to choose from.
- 6.3.1 Discuss ONE limitation of using closed questions in a questionnaire. (1)
- 6.3.2 Give TWO benefits for a researcher when closed questions are answered electronically. (2)
- 6.4 State THREE ways in which a chart/graph can be made easier to interpret when it is included in a report. (3)
- [10]**

QUESTION 7: SOCIAL IMPLICATIONS

- 7.1 Communicating via e-mail has become the norm for society at large.
- 7.1.1 Give TWO indications that a received e-mail may be a possible phishing attempt. (2)
- 7.1.2 Give ONE possible reason as to why your e-mail program is set to block .exe files. (1)
- 7.1.3 Give TWO types of theft that can be committed with the aid of computers, apart from the theft of hardware and data/intellectual property. (2)
- 7.2 The geotagging function of modern cameras is useful for holiday-makers and tourists. Explain what this statement means by explaining what *geotagging* is. (2)
- 7.3 Give TWO potential disadvantages of e-learning when compared to the traditional classroom approach, excluding any cost factors. (2)
- 7.4 Give ONE indication that a message you have received is a hoax. (1)
- [10]**

QUESTION 8: SOLUTION DEVELOPMENT

8.1 How do you convert an endnote to a footnote? (3)

8.2 Refer to the diagram below and answer the following question.

	A	B	C	D	E	F	G	H
1	Marks per Semester							
2								
3				Semester 1				
4		Codes	Students	T1	T2	T3	Total	T1
5			Chabeli SA	39	37	4	80	24
6			Fobs (UBK)	0	0	0	0	2
7			Khabola SS	0	1	0	1	0
8			Majola BG	2	1	0	3	1
9			Mangoenyana PO	0	0	0	0	1
10			May KI	1	14	0	15	18
11			Mbelebele LS	0	0	0	0	0

Each student needs a unique code to receive their overall final results.

Write down the function you would use in cell **B6** to create a code in capital letters by using the first 2 letters of students' names (column C). (3)

8.3 An examination session took place from 4 April 2018 to 15 April 2018.

Change the properties of the ExaminationDate field in a database to ensure that only valid dates can be entered. (3)

8.4 Write down the tags used to insert a red colour horizontal line (hr/) in an HTML web page with a width of 50%. (2)

8.5 Which spreadsheet feature will systematically insert automatic numbers from 1 to 50 in consecutive rows? (1)

8.6 Name THREE possible data sources to create mailing labels in a mail merge. (3)

[15]

TOTAL SECTION B: 75

SECTION C: INTEGRATED SCENARIO**QUESTION 9**

Your school is launching a major drive to embrace the digital era. The expansion of their network, linked with increased Internet availability, has made it possible for them to better utilise new technologies and ICT. Apart from all the benefits, the increased use of computers and online services pose challenges in terms of providing improved hardware and educating users.

- 9.1 Name TWO IT/CAT-related jobs that will be created when setting up and expanding the network. (2)
- 9.2 Access to the server room must be controlled. The administrative staff members use biometrics to gain access to the server room.
- 9.2.1 Explain the term *biometrics*. (2)
- 9.2.2 Give a suitable example of biometrics to be used in this scenario. (1)
- 9.3 It has been suggested that the other staff members use RFID tags to gain access to the server room.
- State TWO disadvantages of using RFID tags for this application. (2)
- 9.4 Learners complain that their computers become very slow quickly when they open more applications. It has been suggested that they may be using too much virtual memory.
- 9.4.1 What is *virtual memory*? (1)
- 9.4.2 Which software implements and manages virtual memory in a computer system? (1)
- 9.4.3 How can the use of virtual memory be limited? (1)
- 9.5 A logical effect of the improvements at the school has been an increase in the use of cloud computing.
- 9.5.1 Cloud computing includes cloud software services, such as Office365.
- Explain how cloud applications work in general. (2)
- 9.5.2 State TWO disadvantages of using online software services. (2)

- 9.6 Parents/Custodians are concerned about learners' exposure to social networking sites and cybercrime.
- 9.6.1 Suggest THREE ways of using social networking sites responsibly. (3)
- 9.6.2 Give TWO reasons why cybercrime is prevalent. (2)
- 9.6.3 A general crime people commit is using unsecured Wi-Fi internet connections without permission.
- What term is used to describe this crime? (1)
- 9.7 Ransomware is a type of malicious software from crypto virology that threatens to publish the victim's data or perpetually block access to it unless a ransom is paid.
- 9.7.1 How can you prevent ransomware attacks? (2)
- 9.7.2 How would you remove ransomware from your computer? (2)
- 9.7.3 Anonymous payment services are used for ransomware payment.
- Name ONE method of payment that can be used. (1)
- [25]**

QUESTION 10

The local university is upgrading their library and the ICT infrastructure. The university's website can be used to check timetables and make reservations for access to the research section of the library.

- 10.1 An AUP document has been compiled for the library. One of the points listed in the document states that, where possible, electronic documents should be used instead of printed documents.
- 10.1.1 What does the acronym *AUP* stand for? (1)
- 10.1.2 Briefly explain the purpose of having an AUP. (2)
- 10.2 Some of the electronic documents are stored in an online storage facility to facilitate file syncing.
- Explain the concept of *file syncing*. (2)
- 10.3 The university employed a web designer to redesign the website.
- 10.3.1 Name TWO skills that a web designer would need when creating a website. (2)
- 10.3.2 Students can access the website from their mobile devices.
- State TWO factors that a web designer must take into consideration when designing websites to be accessible from mobile devices. (2)
- 10.4 Some students watch videos on their electronic devices as part of research projects. The videos are saved with metadata on an SSD.
- 10.4.1 What is *metadata*? (1)
- 10.4.2 Suggest a suitable format for the compression of videos. (1)
- 10.5 Schedules for short-course lectures and webinars are displayed on the website.
- 10.5.1 What is a *webinar*? (1)
- 10.5.2 How can the students remain informed of changes in the schedules without visiting the website? (2)

10.6 University staff want to be sure that information sent over the network will be safe and secure. Encryption will be used to secure the data.

10.6.1 Explain what the term *encryption* means. (2)

10.6.2 A yellow lock is displayed on the URL bar when the user opens the university's website.



What other visual indication is displayed that indicates that the website is secure, besides the yellow lock? (1)

10.6.3 When a user clicks on the yellow lock, the following dialogue box is displayed:



Which TWO pieces of information on the certificate can be used to verify that the website is legitimate? (2)

10.7 Staff members are often warned against social engineering.

10.7.1 Explain what *social engineering* is. (2)

10.7.2 What is a consequence of falling victim to social engineering? (2)

10.8 Green computing has become a focal point in the ICT field.

Suggest any TWO initiatives for the library to implement green computing. (2)
[25]

TOTAL SECTION C: 50
GRAND TOTAL: 150

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GRADE 12

SEPTEMBER 2021

**COMPUTER APPLICATIONS TECHNOLOGY P2
MARKING GUIDELINE**

MARKS: 150

This marking guideline consists of 16 pages.

SUGGESTIONS AND RECOMMENDATIONS TO MARKERS

- Revisit the questions and the marking guideline frequently during the marking session.
- It is advisable to read the question frequently (and re-read) together with the candidate's response to check that it correlates, so that you are not misled by the candidate's statements/answers.
- Be careful not to focus on keywords or general statements, but rather read the entire answer. If in doubt, read the entire answer and then the question paper and the marking guideline.
 - Ask yourself or your senior marker if the response could 'fit' into the marking guideline before allocating the correct marks to the candidate.
 - Accept correct answers that are expressed differently, e.g. the marking guideline states 'slow' and the candidate responds with 'not fast'.
- Beware of overlapping answers to a specific question. In general, ONE mark is awarded per fact.
- Do not choose answers on the candidate's behalf. Where a question requires a candidate to LIST or NAME/STATE: mark the first number of instances required, e.g. the first TWO facts if the candidate presents a list of FIVE facts and only TWO facts were required, even if presented in paragraph format.
- Questions requiring longer answers must be regarded as a single unit. Marks can be awarded if correct statements are found anywhere in the paragraph.

SECTION A**QUESTION 1: MULTIPLE-CHOICE**

- 1.1 A
- 1.2 D
- 1.3 B
- 1.4 D
- 1.5 A
- 1.6 B
- 1.7 A
- 1.8 C
- 1.9 A
- 1.10 C

[10]**QUESTION 2: MATCHING ITEMS**

- 2.1 S
- 2.2 E
- 2.3 L
- 2.4 K
- 2.5 A
- 2.6 M
- 2.7 B
- 2.8 I
- 2.9 D
- 2.10 O

[10]**QUESTION 3: TRUE/FALSE ITEM**

- 3.1 False, Footer (1)
- 3.2 False, Radio button (1)
- 3.3 True (1)
- 3.4 True (1)
- 3.5 False, Size/type (1)

[5]**TOTAL SECTION A: 25**

SECTION B

QUESTION 4: SYSTEM TECHNOLOGIES

4.1	4.1.1	To hold data and programs being processed (i.e. temporarily / while the computer is on) ✓	1	2
	4.1.2	<u>Any ONE difference (besides difference in function):</u> ✓ • RAM is electronic; storage is magnetic / optical / electronic • RAM is fast; storage is slower • RAM is more expensive per GB; storage is cheaper <u>NOTE TO MARKER:</u> Do not accept 'RAM = volatile vs. storage = permanent', or 'much less RAM is required than storage', since these relate directly to function	1	
4.2	<u>Any TWO input devices:</u> ✓✓ • Accelerometer • Barometer • Microphone • Touch screen • GPS • Wi-Fi • 3G		2	2
4.3	<u>Any TWO reasons:</u> ✓✓ • They have been replaced by other (more efficient) portable devices such as flash drives and external hard drives • Software and entertainment (games, music, video, etc.) are now distributed/downloaded via the internet • Saves physical space and weight in portable computers/portable computers can be designed to be thinner and lighter		2	2
4.4	<u>Any TWO trouble-shooting techniques:</u> ✓✓ • Disconnect and reconnect the mouse • Try plugging it into a different USB port • Reboot the computer • Check USB Controllers in Device Manager (and re-enable the port if necessary)		2	2
4.5	<u>Any TWO ways:</u> ✓✓ • Make regular/automatic backups • Restrict access rights to the file/pdf format • Make files read-only • Use versions option to save different versions • Use passwords (lock) and encryption • Save regularly (with confirmation)		2	2

4.6	<u>Any ONE reason:</u> ✓ • Compatibility issues removed – PDF readers (e.g. Adobe Reader) are freely available and allow people to read the files without having the software used to create them • File sizes can sometimes be smaller (so faster to send, and less storage space needed) • Files can be set (by using the full Adobe Acrobat package) so that they cannot be edited or changed		1	1
4.7	<u>Any TWO limitations:</u> ✓✓ • Image quality/clarity not as good as that of high-quality monitors • Normally limited to 4 : 3 aspect ratio (almost square)/not suited to 16 : 9 aspect ratio used for most movies • Lower contrast ratios – result in ‘muddier’ images with lower colour quality		2	2
4.8	<u>Any TWO pieces of equipment:</u> ✓✓ • Headphones • Head gear/helmet • Gaming controller • Mobile device/Cell phone • Gloves/Body Suits fitted with sensors/controllers • Room/Simulation environment/A powerful computer		2	2
4.9	<u>Any ONE example:</u> ✓ • Tourism/Explores places • Convenience/Virtual tours • Conferencing • Flight simulation • Communication • Training of pilots • Marketing • Education • Medical personnel to deal with injuries		1	1
4.10	4.10.1	A drone is a flying robot that can be remotely controlled or fly autonomously through software-controlled flight plans. ✓	1	3
	4.10.2	<u>Any TWO benefits:</u> ✓✓ • No other complicated machinery is needed for manufacturing • Parts can be computer designed and directly printed • Easy to change design and print again • Parts that fail can easily be printed again • No waiting period for ordered parts • More cost effective for small numbers	2	

4.11	4.11.1	Performs all the processing / calculations / comparisons / decisions in the computer. ✓	1	
	4.11.2	<u>Any ONE method:</u> ✓ • Connect an external DVD drive to the computer (via USB), and install it from there • Copy the contents of the DVD to another medium (e.g. portable hard drive), and try to install it from there (find and run the Setup.exe installation file)	1	
	4.11.3	<u>Any ONE requirement (besides processor and memory):</u> ✓ • (Available/free) disk space • Graphics requirements (esp. for games, CAD, etc.) <u>NOTE TO MARKER:</u> <i>Accept specific requirements, e.g. 1 GB available hard disk space, 1024 x 768 minimum resolution, 512 MB dedicated video RAM</i>	1	3
4.12	<u>Any THREE advantages:</u> ✓✓✓ • More faster than normal hard drives • No moving parts and can't be damaged by being dropped or moved whilst in use • Much more energy-efficient • Durable • Run quieter than traditional hard drives • Big storage space • Lighter to carry around		3	3
				[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1	5.1.1	<u>Any ONE reason:</u> ✓ • Portability and mobility/a user can connect via a laptop or other device/Access to network from a wider range • A device can be added to the network easily • Cost effective by saving on data costs	1	4
	5.1.2	<u>Any ONE reason:</u> ✓ • Provides a unique address for communication • To prevent conflicts in addresses during communication	1	
	5.1.3	<u>Any TWO reasons:</u> ✓✓ • Too far away from the router • Too many users are accessing at the same time/Lack of sufficient bandwidth • Interferences like electromagnetic interferences (EMI) • Interferences by structures like trees/buildings	2	
5.2	5.2.1	<u>Any TWO services:</u> ✓✓ • E-mail • Secure web hosting • Spam filtering • Technical support	2	6
	5.2.2	<u>Any TWO benefits:</u> ✓✓ • High speed/permanent connection • Allows for internet access and telephone use at the same time • Relatively cheap when using a lot of data • Scalability/different bandwidth packages	2	
	5.2.3	Connects devices to one another ✓ and directs traffic ✓ between devices	2	
5.3	5.3.1	<u>Any ONE medium:</u> ✓ • Glass fibres • Light • Laser	1	3
	5.3.2	<u>Any TWO reasons:</u> ✓✓ • Less interferences/Less EMI • Secure and difficult to tap/No eavesdropping • Very fast speed • Can cover large distances without regeneration	2	

5.4	<u>Any TWO disadvantages:</u> ✓✓ • Not all organisations have FTP servers • Transfer process may be more complicated than using drag-and-drop methods • FTP connections sometimes get interrupted and transfer has to be restarted • Modern web browsers are dropping support for FTP/In some cases one has to resort to specialised software • Data can be intercepted	2	2
			[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1	6.1.1	Describe what needs to be done in your own words, taking into account what the problem is that you need to investigate and what the investigation would be about. ✓	1	2
	6.1.2	<u>Any ONE:</u> ✓ - It is a list of sources that were quoted in the report - It shows the evidence of where you got the information from - If plagiarism was committed	1	
6.2	<u>Any TWO reasons:</u> ✓✓ - The author is not an authority on the topic/Cannot obtain bibliographical information - The information is too old - The information is biased - The information is very limited and does not adequately cover the topic - Cannot be cross-referenced - Information was plagiarised (Plagiarism must be qualified)		2	2
6.3	6.3.1	<u>Any ONE limitation:</u> ✓ - Limited options may lead to skewed data - Respondent may want to give an answer that is not in the list/Limits possible responses that could be given by the respondent - Options may be biased towards a point of view - No indications of whether the respondent understood the questions	1	3
	6.3.2	<u>Any TWO benefits:</u> ✓✓ - Easier to process/analyse responses in a spreadsheet/database - Can read all responses/Bad handwriting is not an issue/Do not have to retype the responses/Less errors in data - Data capturing can be automated - Easy to share data with others/publish dataset - Data validation of responses can be done - Possible response times are quicker - Higher return rate possible	2	
6.4	<u>Any THREE reasons:</u> ✓✓✓ - Add a Chart title - Use Legends - Use Axes/series labels - Use Gridlines - Add data labels - Add Colours - Use trend lines - Select the correct chart type		3	3
				[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1	7.1.1	<u>Any TWO indications:</u> ✓✓ • E-mail address looks suspicious • Strange domain name • It would ask you to follow a link • It would ask you to give personal information • It seems as if they need the information immediately • E-mail has lots of errors	2	5
	7.1.2	It might be a virus. ✓	1	
	7.1.3	<u>Any TWO types:</u> ✓✓ • Bandwidth • Identity theft • Processing time and power • Copyrighted material, e.g. piracy • Money	2	
7.2	Geotagging refers to and including the position/GPS coordinates ✓ of where the photo was taken in the metadata/with the file. ✓		2	2
7.3	<u>Any TWO disadvantages:</u> ✓✓ • Lack of access to technology/working hardware/Digital Divide • Lack of technology skills to unlock/maximise potential of e-learning • Potential lack of guidance/input/feedback/monitoring from the teacher • Dependent on electricity/battery life • Feelings of being isolated/Lack of human contact/Contributes to lack of socialisation skills • Health-related concerns ('Long hours of sitting'), etc.		2	2
	<u>NOTE TO MARKER:</u> Do NOT accept any answers relating to costs.			
7.4	<u>Any ONE indication:</u> ✓ • It requests to be forwarded to many other people • You receive the same message from many people • It could include a threat • Difficult to verify contents of e-mail • Highly emotional content		1	1
				[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1	Open Footnotes grouping ✓ Click Convert Note ✓ Click Convert Endnote to Footnote ✓ OR Right click ✓ on footnote ✓ Click on Convert to Endnote ✓	3	3
8.2	Cell B6: =UPPER ✓ (LEFT ✓ (C6,2) ✓	3	3
8.3	ExaminationDate field validation rule: • Between #04/04/2018# OR >=#04/04/2018# OR >#03/04/2018# ✓ • AND ✓ #15/04/2018# OR <=#15/04/2018# OR <#16/04/2018# ✓	3	3
8.4	<hr color = "red" ✓width =50%> ✓	2	2
8.5	Autofill ✓	1	1
8.6	<u>Any THREE:</u> ✓✓✓ • Database table (or query) • Spreadsheet • E-mail contact list • E-mail address list • Text files	3	3
			[15]

TOTAL SECTION B: 75

SECTION C: INTEGRATED SCENARIO

QUESTION 9

9.1	<u>Any TWO IT/CAT related jobs:</u> ✓✓ - IT/CAT technician - Network engineer - Network architect - Network administrator - Network analyst <u>NOTE TO MARKER:</u> Do not accept: Programmer or any job related to database/database administrator.		2	2
9.2	9.2.1	The use of personal characteristics ✓ to authenticate the identity of a person. ✓ <u>NOTE TO MARKER:</u> Also accept: Use parts of the body for access control	2	3
	9.2.2	<u>Any ONE example:</u> ✓ - Retina/eye - Fingerprint - Voice recognition - Facial recognition - Palm readers	1	
9.3	<u>Any TWO disadvantages:</u> ✓✓ - RFID cards can be read from a distance, that can trigger the unlocking of the room even when not required - Cards do not validate the identity of the user - Cards can be stolen/lost - Cards can be cloned - Inconvenience of carrying cards around - Cost of manufacturing cards/time consuming <u>NOTE TO MARKER:</u> Any suitable answer.		2	2
9.4	9.4.1	Hard drive space/storage ✓ reserved by the operating system to be used as RAM/memory. ✓ <u>NOTE TO MARKER:</u> Also accept for 2 marks: Hard drive space to be used when the RAM is full.	1	3
	9.4.2	Operating system ✓	1	
	9.4.3	<u>Any ONE:</u> ✓ - Add more RAM - Do not open too many applications/Close applications not in use.	1	

9.5	9.5.1	- Software where most of the processing is done in the cloud; the processing is done by servers which are accessible via the internet. ✓ - The interface is created on the web servers/on local computers using apps or interface is accessed through a web browser. ✓	2	4
	9.5.2	<u>Any TWO disadvantages:</u> ✓✓ - Software is not owned and a regular fee needs to be paid - Cost of data used when everything is transferred from the cloud can be high - When Internet is down, software cannot be accessed - Exposure to security issues when documents are stored in cloud - Too many users can slow the service down	2	
9.6	9.6.1	<u>Any THREE ways:</u> ✓✓✓ - Limit time on web/Turn off notifications when doing important work/Switch off mobile device at specific times - Try to remove yourself from FOMO - Refrain from insulting other people/Bullying - Be aware that all posts are public - Be aware that the internet never forgets information/cannot delete information from the internet - Do not share personal information e.g. ID number or bank account numbers - Do not befriend strangers <u>NOTE TO MARKER:</u> Any suitable answer.	3	6
	9.6.2	<u>Any TWO reasons:</u> ✓✓ - Low risk of physical danger to criminal/not physically present when crime is committed - Difficult to detect a crime - Difficult to trace who committed the crime - Increase use of Internet - Increased number of online financial transactions - People's general ignorance and carelessness	2	
	9.6.3	Piggybacking ✓	1	

9.7	9.7.1	<u>Any TWO ways:</u> ✓✓ • Keep your operating system up-to-date to ensure you have fewer vulnerabilities to exploit • Don't install software or give it administrative privileges unless you know exactly what it is and what it does • Install antivirus software, which detects malicious programs like ransomware as they arrive • Install whitelisting software, which prevents unauthorized applications from executing • Back up your files frequently and automatically	2	5
	9.7.2	<u>Any TWO ways:</u> ✓✓ • Reboot Windows 10 to safe mode • Restore clean backup • Install anti-malware software • Scan the system to find the ransomware program • (System) Restore the computer to a previous state	2	
	9.7.3	Cryptocurrency ✓ (Bitcoins)	1	
				[25]

QUESTION 10

10.1	10.1.1	Acceptable Use Policy ✓	1	3
	10.1.2	To provide the user of a network environment with the rights and responsibilities ✓ when using their ICT resources/ network. ✓	2	
10.2	Ensure that all devices ✓ contain the most up to date version of the same document. ✓		2	2
10.3	10.3.1	<u>Any TWO skills:</u> ✓✓ • Software programming skills • Graphic design skills • Knowledge on HCI (Human-Computer-Interface) principles • Creativity and imagination • Knowledge on advances in technology	2	4
	10.3.2	<u>Any TWO factors:</u> ✓✓ • Page must automatically resize/provide for smaller screens • Different format and page layout/readability • Reduced size of image files/less data to download • Exclude certain content/functionality/flash players • Work cross platforms • Limitations in terms of processing and storage on smaller devices	2	
10.4	10.4.1	Additional data/information on the video that is saved with the file. ✓	1	2
	10.4.2	<u>Any ONE format:</u> ✓ • MPEG-2 • MPEG-4 • .MP4 • .avi • MKV <u>NOTE TO MARKER:</u> Also accept any other acceptable compression format	1	
10.5	10.5.1	Online seminars ✓	1	3
	10.5.2	<u>Any TWO ways:</u> ✓✓ • Make use of RSS feeds • Suitable apps • Message alerts/SMS	2	

10.6	10.6.1	<i>Encryption</i> is the process of converting information or data into a code ✓ to prevent unauthorized access. ✓ <u>NOTE TO MARKER:</u> Also accept any other acceptable answer.	2	5
	10.6.2	The URL contains https:// ✓	1	
	10.6.3	<u>Any TWO:</u> ✓✓ • The certificate is provided by a third party company like VeriSign • It is linked to a specific web address, confirming its validity • Date of validity	2	
10.7	10.7.1	Social engineering refers to ‘conning’ or tricking a person ✓ into willingly giving out personal information. ✓	2	4
	10.7.2	<u>Any TWO:</u> ✓✓ • Sensitive information such as passwords or other information that can be used to commit identity theft • It can be used to impersonate someone to install malware • Or any other fraudulent purposes	2	
10.8	<u>Any TWO:</u> ✓✓ • Store records electronically – use less paper • Scan research from books rather than copying • Switch computers off when not in use • Set computers to sleep mode		2	2
				[25]

TOTAL SECTION C: 50

GRAND TOTAL: 150