



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

COMPUTER APPLICATIONS TECHNOLOGY P2

2021

MARKS: 150

TIME: 3 hours

This question paper consists of 17 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of:

SECTION A (25)
SECTION B (75)
SECTION C (50)
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, etc.
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 it is used together with a reason or an explanation.
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, e.g. 1.11 D.

- 1.1 A file ... specifies the unique location of a file or folder in a file system.
- A name
 - B path
 - C attribute
 - D extension
- (1)
- 1.2 Which ONE of the following properties does NOT refer to the metadata of a word processing document?
- A Author
 - B Size
 - C Format
 - D Created
- (1)
- 1.3 ... is an acronym for the term used to describe human errors and its influence on computer output.
- A FOSS
 - B SOHO
 - C DIMM
 - D GIGO
- (1)
- 1.4 On older computers the ... will slow down the transfer of data when compared to newer computers.
- A file size
 - B lag/delay
 - C hardware
 - D images
- (1)
- 1.5 The ... will determine the type of language and graphics used in a presentation program.
- A layout
 - B conclusion
 - C audience
 - D animation
- (1)

- 1.6 A touch screen is the most effective input device when a user is required to ...
- A choose between limited options.
 - B capture large amounts of text.
 - C select from a long list of unsorted options.
 - D enter a large series of numbers. (1)
- 1.7 A ... is an audio file usually delivered over the internet.
- A wiki
 - B portal
 - C vlog
 - D podcast (1)
- 1.8 A ... is a malicious program that is used to initiate a DDoS attack.
- A virus
 - B bot
 - C keylogger
 - D worm (1)
- 1.9 Which ONE of the following calculated fields will determine value-added tax of 15% in a database query correctly?
- A $VAT:[Price]*0.15$
 - B $VAT=(!Price)*0.15$
 - C $VAT=["Price"]*0.15$
 - D $VAT:(Price)*0.15$ (1)
- 1.10 Faking an e-mail header to hide the actual origin of the e-mail is known as ...
- A pharming.
 - B spoofing.
 - C piracy.
 - D copyright. (1)
- [10]**

QUESTION 2: MATCHING ITEMS

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

COLUMN A		COLUMN B	
2.1	A feature that refers to whether a printer can be used with a particular operating system	A	blogs
		B	ADSL
2.2	One way of solving the problem of an application that has stopped responding	C	defragmenter
		D	NOW
2.3	A specification that measures the quality of pictures taken by a camera	E	hacking
		F	graphics card
2.4	A technology that can be used to establish a wireless connection between two devices by bringing them close together	G	Wi-Fi functionality
		H	MP
2.5	An attempt to access personal information by tricking a user into clicking on a link in an e-mail	I	click-jacking
		J	network card
2.6	Websites that read like a personal journal and are often updated with news and events	K	NFC
		L	update
2.7	A spreadsheet function that returns both the date and time	M	phishing
		N	DPI
2.8	A system utility that reorganises parts of files	O	restart
		P	compatibility
2.9	The term given to the practice of accessing a network without permission	Q	identity theft
		R	TODAY
2.10	A hardware component that can be added to a computer to improve video editing performance	S	Disk Cleanup
		T	wikis

(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
The initial start-up instructions are stored in the <u>ROM</u> .	True
<u>Wi-Fi</u> can only connect devices to each other up to 10 metres.	False – Bluetooth

- 3.1 The wild card character can be used in the Find and Replace feature of a word processor. (1)
- 3.2 Instant messaging platforms often use encryption to protect user data. (1)
- 3.3 An e-mail program may reject an attachment based on the date of the file. (1)
- 3.4 The HDMI port on a computer carries both audio and video signals. (1)
- 3.5 Ad-blocking programs identify and remove malware. (1)

[5]

TOTAL SECTION A: 25

SECTION B

QUESTION 4: SYSTEMS TECHNOLOGIES

4.1 A SOHO computer user must choose computer hardware and software for his auditing business.

Study the table below to help him make the correct buying decisions.

SPECIFICATIONS TO CHOOSE BETWEEN		CHOICE	REASON
e.g. 19" 4:3 monitor	e.g. 24" 16:9 monitor	e.g. 24" 16:9 monitor	e.g. Physically larger
SSD	HDD	4.1.1	Cheaper per GB of storage space
2 GB RAM	16 GB RAM	16 GB RAM	4.1.2
Windows 7 Professional Edition	Windows 10 Professional Edition	4.1.3	4.1.4

Complete the table above by writing down only the answers next to the question numbers (4.1.1 to 4.1.4) in your ANSWER BOOK. (4 x 1) (4)

4.2 Why would an entry-level CPU be a good choice for a computer in a SOHO office? (2)

4.3 Which software or hardware device could be added to a computer network to prevent unauthorised access to the network? (1)

4.4 A hard disk analysis shows that the drive is almost full.

4.4.1 Explain TWO problems that may occur when the hard disk drive is full. (2)

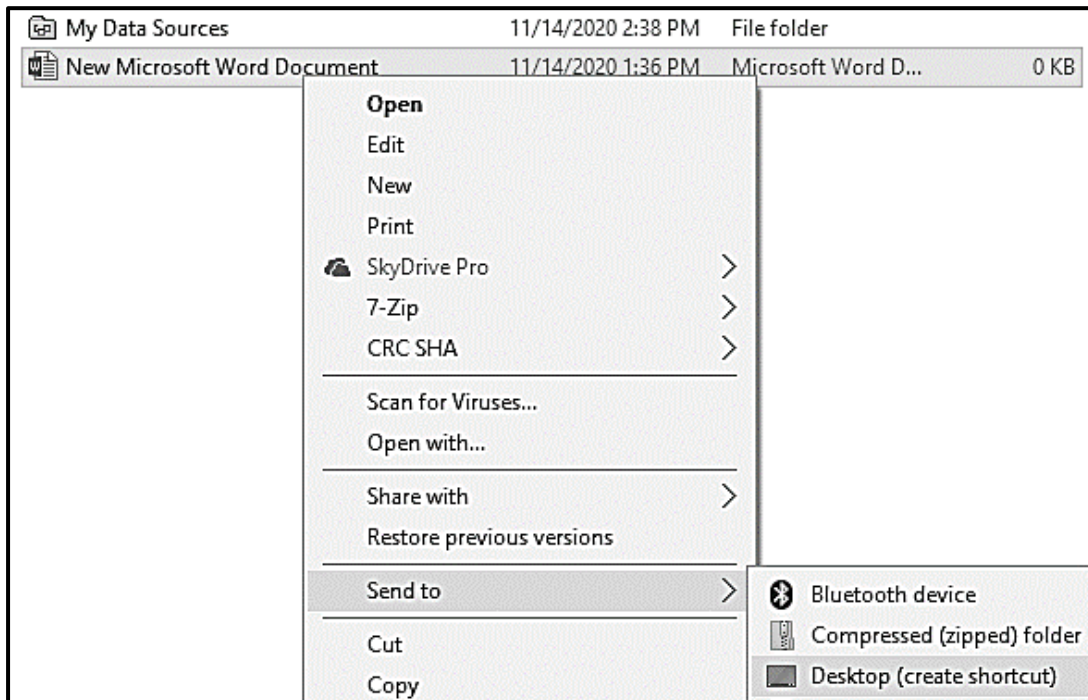
4.4.2 Name ONE system utility program that can remove unwanted files. (1)

4.4.3 How can one free up some space on the hard drive, other than removing files? (1)

4.5 Give TWO ways in which to solve the problem of a computer that switches on but does not load the operating system at all. (2)

4.6 Explain ONE disadvantage of convergence. (1)

- 4.7 Why would you recommend using note-taking software? Give TWO reasons. (2)
- 4.8 Give TWO functions of a web browser, other than the ability to view web pages. (2)
- 4.9 Software should be updated regularly.
- 4.9.1 Discuss TWO challenges that a user may experience when updating software. (2)
- 4.9.2 Give ONE way to ensure that the computer does not update while it is being used. (1)
- 4.10 A user tries to save a word processing document on the Desktop by performing the action as shown in the screenshot below.



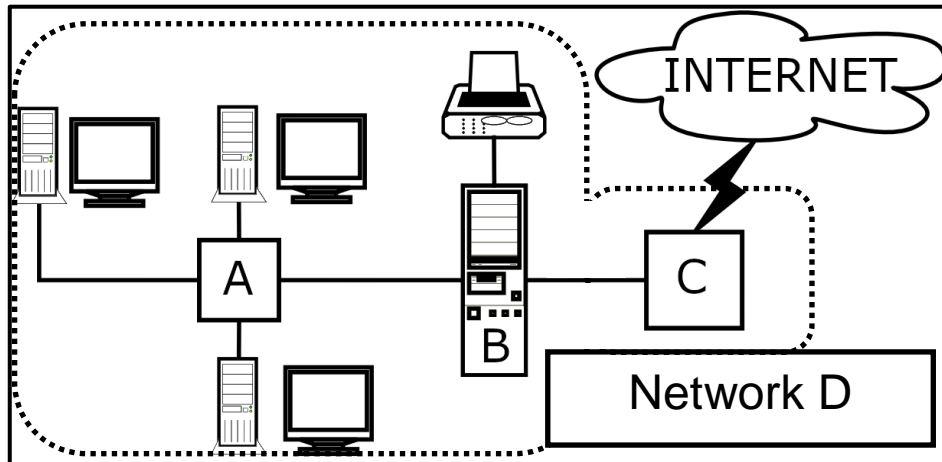
- Give the reason why the user is NOT successful AND give a solution to this problem. (2)
- 4.11 You find that your voice recognition software does not always correctly understand what you are saying. (2)
- Give TWO possible solutions to this problem. (2)

[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1 State TWO advantages of grid computing. (2)

5.2 Consider the diagram of a network below and answer the questions that follow.



5.2.1 Identify devices **A**, **B** and **C** in the network diagram. (3)

5.2.2 What type of network is Network **D**? (1)

5.3 Give TWO reasons why it is better to turn off a Bluetooth connection on a tablet or smartphone when the connectivity is not required. (2)

5.4 Suggest TWO changes that would make the following password more secure, without changing the length of the password:

1b00f70e (2)

5.5 When you make an online payment, some service providers will send a one-time password ('OTP') to your smartphone.

Why is it necessary to enter this OTP if you have already signed in with your username and password? (1)

5.6 Why would you use the Bcc feature of an e-mail program when sending an e-mail? (1)

5.7 What type of communication medium is used in long-distance undersea cables, such as SEACOM, that connect Africa to other continents for internet access? (1)

5.8 Give TWO disadvantages of FTP technology for the transfer of larger files on the internet. (2)

[15]

QUESTION 6: INFORMATION MANAGEMENT

- 6.1 Explain TWO ways in which a teacher can find out whether learners are guilty of plagiarism in their PATs. (2)
- 6.2 State TWO ways in which a chart/graph can be made easier to interpret when it is included in a report, such as the PAT. (2)
- 6.3 A Tourism learner created an electronic survey which included the question: 'How long was your stay at the hotel?'
- Respondents could choose from the following options in a dropdown list:
- ❖ *One day*
 - ❖ *Two days*
 - ❖ *Three days or more*
 - ❖ *Longer than five days*
- 6.3.1 Give TWO advantages of using drop-down form fields in an electronic questionnaire. (2)
- 6.3.2 Which ONE of the options in the example above should be removed? Motivate your answer. (2)
- 6.4 Explain TWO ways in which to ensure the logical grouping and flow of information in a formal report. (2)
- [10]**

QUESTION 7: SOCIAL IMPLICATIONS

- 7.1 Define the concept of *social engineering*. (2)
- 7.2 Discuss TWO negative implications for a company when employees do private tasks on company computers during working hours. (2)
- 7.3 Suggest ONE software technology that can be used with internet-connected cameras to identify potential criminal activity. (1)
- 7.4 State TWO strategies that learners could use to discourage cyberbullying. (2)
- 7.5 Give ONE reason why some people might unknowingly trust a program that potentially contains a Trojan. (1)
- 7.6 Study the advertisement below and answer the questions that follow.



- 7.6.1 Give the general term used to describe the design of furniture and other devices that improves the working environment. (1)
- 7.6.2 Why will the advertised chair be beneficial for a computer user? (1)
- [10]**

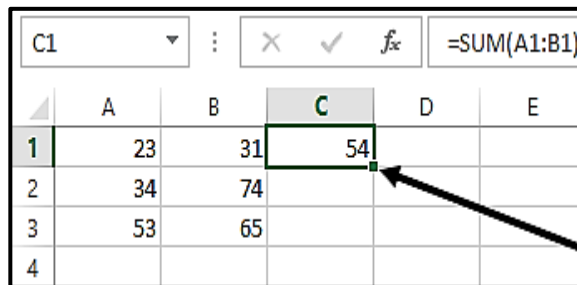
QUESTION 8: SOLUTION DEVELOPMENT

8.1 Give TWO different methods to set the indents in a word processing document. (2)

8.2 The Restrict Editing feature on the Developer tab will allow you to control the number of changes that others can make to your electronic form.
Give ONE example of how the editing is limited using this feature. (1)

8.3 You try to open a particular word processing file, which you know you definitely saved on your computer.
Explain why this file does not appear in the list, when you browse for the file. (1)

8.4 What is the purpose of the small square in the bottom right-hand corner of cell C1, indicated by the arrow in the screenshot below?



8.5 Why should the table range in a VLOOKUP function have an absolute cell reference? (1)

8.6 Explain how the data in the 'original data' table below was processed to give the data shown in the 'processed data' table.

Original data	Item_ID	Department	Price	Number_in_Stock
	67474	Computers	R 3,424.00	35
	67653	Computers	R 3,493.00	223
	67671	Appliances	R 4,666.00	100
	67742	Appliances	R 1,141.00	203
	67759	Computers	R 4,887.00	96
	67806	Computers	R 2,360.00	45
	67917	Appliances	R 649.00	146

Processed data

Item_ID	Department	Price	Number_in_Stock
67742	Appliances	R 1,141.00	203
67917	Appliances	R 649.00	146
67671	Appliances	R 4,666.00	100
67653	Computers	R 3,493.00	223
67759	Computers	R 4,887.00	96
67806	Computers	R 2,360.00	45
67474	Computers	R 3,424.00	35

(1)

(1)

(2)

- 8.7 A school wishes to send out letters to the parents of the Grade 12 learners, using the mail merge feature of the word processor. The details of the Grade 12 parents are captured in a spreadsheet.
- 8.7.1 Give ONE reason why the Insert Merge Field option is not available. (1)
- 8.7.2 Assume that the problem in QUESTION 8.7.1 has been resolved and the merge fields were inserted correctly.
- Give a reason why some of the expected records do NOT display in the preview of the mail merge. (1)
- 8.8 Database queries are used to analyse data.
- 8.8.1 On which database objects can a query be based? (1)
- 8.8.2 How can you determine the name of the object on which a query is based? (1)
- 8.9 Draw a diagram to show what will be displayed in a web browser when this HTML code is run:

```
<table border="1">
  <tr>
    <td colspan="2">DESCRIPTION</td>
  </tr>
  <tr>
    <td>Item 2</td>
    <td>Item 1</td>
  </tr>
</table>
```

(3)
[15]

TOTAL SECTION B: 75

SECTION C: INTEGRATED SCENARIO**QUESTION 9**

The Covid-19 pandemic necessitated health screening at the entrances to all public facilities, such as schools, libraries and clinics, to limit the spread of the coronavirus.

- 9.1 Give TWO reasons for using ICTs, instead of a pen and paper, to record and manage the health screening data of learners and teachers at a school. (2)
- 9.2 The principal suggests that they buy an electronic tablet to record the health screening data of people entering the school.
- 9.2.1 Give TWO reasons why you agree with the principal that a tablet would be better than a laptop computer for this purpose. (2)
- 9.2.2 Give TWO specifications/features of a tablet that you would look for when buying a tablet for this purpose. (2)
- 9.3 The new tablet needs to be connected to the school network so that the captured data can be sent to the school server which is located on the third floor.
- 9.3.1 How will the tablet communicate with the server at the school? (1)
- 9.3.2 The tablet does not always connect to the network at the school entrance.
- Suggest TWO ways to correct this problem. (2)
- 9.4 The screenshot of part of a spreadsheet below shows some health screening data of the learners:

	A	B	C	D	E
1	COVID-19 Screening				
2	Ad min	Da te	Tim e	Temp	Cough
3	105669	23/01/2021	7:15	36.4	No
4	502327	23/01/2021	7:15	36.0	Yes
5	687624	23/01/2021	7:16	35.8	No
6	898614	23/01/2021	7:20	36.8	No
7	785346	23/01/2021	7:21	36.3	Yes
8	786654	23/01/2021	7:21	36.7	No

- 9.4.1 Which spreadsheet feature can be used to get rid of the unnecessary spaces in the headings in **row 2**? (1)
- 9.4.2 Which spreadsheet feature would you use in **column D** to automatically highlight a value if a temperature above 38 degrees is entered? (1)
- 9.4.3 Give the spreadsheet function that you would use to determine how many learners have a cough, based on the data in **column E**. (1)

9.5 Below is the Design View of a database table with learner information and the field properties sheet of the **Date of birth** field.

Learner tracing information		
Field Name	Data Type	Description (Optional)
Learner ID number	AutoNumber	
Grade	Yes/No	
Date of birth	Short Text	
Cell number	Short Text	
Address	Short Text	
Parent cell number	Short Text	

Field Properties	
General	Lookup
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	No
Indexed	No
IME Mode	No Control
IME Sentence Mode	None
Text Align	General
Show Date Picker	Never

9.5.1 Suggest THREE improvements that could be made to the **Date of birth** field to ensure the entry of valid data. (3)

9.5.2 Why is it good practice to complete the Description options for each field in the design of the table? (1)

9.6 Give TWO reasons for making a cloud backup of the data. (2)

9.7 State TWO ways in which the school could share the learners' health information electronically with the district office. (2)

9.8 Learners must have accurate information about Covid-19 to protect themselves from possibly contracting the virus.

9.8.1 The Life Orientation teacher gives the learners a long website address that links to factual information.

What service would you use to make it easy to enter or remember this website address? You may use specific examples. (1)

9.8.2 Explain TWO ways in which the creators of fake information make the information seem real or believable. (2)

9.8.3 State TWO ways in which learners can avoid being fooled into believing fake information. (2)

[25]

QUESTION 10

The various Covid-19 protocols that were imposed by the government to restrict the spread of the virus impacted on school attendance.

- 10.1 ICTs allow for teaching and learning to continue when learners are not at school
- 10.1.1 Define the concept of *mobile learning (m-learning)*. (3)
- 10.1.2 Name TWO kinds of electronic resources that teachers can share with learners. (2)
- 10.1.3 Give TWO examples of how virtual reality (VR) can enhance the learning experiences of learners. (2)
- 10.1.4 Name TWO word processing features that teachers can use to give the learners feedback on their work. (2)
- 10.2 Give the generally accepted term that describes a lack of access to ICTs. (1)
- 10.3 The ICT administrator designed a website to keep the parents informed of the e-learning/m-learning strategies at the school.
- 10.3.1 State TWO advantages of using an ISP for hosting the website. (2)
- 10.3.2 Give TWO reasons why an image does not display in a web browser, even though the correct HTML code was used. (2)
- 10.3.3 Explain why some parents who view the website on their smartphones may not see the same website layout as one would see on a computer. (1)
- 10.4 Teachers and learners will have to upload and download learning material.
- 10.4.1 Why is it ideal to have a broadband connection for e-learning? (1)
- 10.4.2 What is the advantage of having an unshaped line when downloading learning material? (1)
- 10.4.3 How can one avoid information overload? (1)

- 10.5 The school received a donation of computing devices to assist the learners.
Give TWO criteria to determine if the donated devices can be used for learning purposes. (2)
- 10.6 Name TWO technologies that can assist in controlling the stock of the devices. (2)
- 10.7 The school uses a database to keep track of the sponsors and the donated devices.
- 10.7.1 Give ONE reason why a database is more suitable than a spreadsheet to store information of donated items. (1)
- 10.7.2 A spreadsheet graph will be used to indicate the value of the devices donated by each sponsor.
How would you create this graph without having to retype the data from the database into the spreadsheet? (1)
- 10.7.3 This graph must be inserted into a word processing document.
How would you ensure that the graph updates when the data in the spreadsheet changes? (1)
- TOTAL SECTION C: 50**
GRAND TOTAL: 150



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2021

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 20 pages.

SUGGESTIONS AND RECOMMENDATIONS TO MARKERS

- Revisit the questions and the marking guidelines frequently during the marking session.
- It is advisable to read (and re-read) the question frequently together with the candidate's response to check that they correlate, 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 and the answer in 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 learner 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, NAME or 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	B	✓	1
1.2	C	✓	1
1.3	D	✓	1
1.4	C	✓	1
1.5	C	✓	1
1.6	A	✓	1
1.7	D	✓	1
1.8	B	✓	1
1.9	A	✓	1
1.10	B	✓	1
Total: [10]			

QUESTION 2: MATCHING ITEMS

2.1	P	✓	1
2.2	O	✓	1
2.3	H	✓	1
2.4	K	✓	1
2.5	M	✓	1
2.6	A	✓	1
2.7	D	✓	1
2.8	C	✓	1
2.9	E	✓	1
2.10	F	✓	1
Total: [10]			

QUESTION 3: TRUE/FALSE ITEMS

(Note to marker: In Question, 3.3, and 3.5 candidates need to provide both the word 'False' and the correct term, e.g. False - motherboard, in order to get the mark.)

3.1	True ✓	1
3.2	True ✓	1
3.3	False, size/type/extension ✓	1
3.4	True ✓	1
3.5	False, Antivirus/Anti-malware ✓	1
		[5]

TOTAL SECTION A: 25

SECTION B**QUESTION 4: SYSTEMS TECHNOLOGIES**

4.1.1	Choice: HDD ✓	1	
4.1.2	Reason: (1) Improves performance/speed (2) More RAM will enable working with many programs/data files opened at the same time without slowing the computer down, etc. ✓ (Any one)	1	
4.1.3	Choice: Windows 10 Professional Edition ✓	1	
4.1.4	Reason for choosing an operating system (1) Business users will require latest features/security offered by Windows 10 (2) Windows 7 is not supported by Microsoft anymore (3) Windows 10 is currently preloaded ✓ (Any one)	1	4
4.2	TWO reasons for an entry level CPU (1) An entry level CPU has enough processing power for a computer used in a SOHO ✓ (2) It would be an unnecessary expense to get a more powerful CPU that is used to capacity ✓		2
4.3	Software/Hardware used to prevent unauthorised network access Firewall/Router ✓		1
4.4.1	TWO problems that occur when the hard disk drive is full (1) (Getting prompts that) there is no space left/Cannot save anything (2) Thrashing/System is slow (3) System sometimes freezes/crashes (4) Programs do not open ✓✓ (Any two)	2	
4.4.2	A system utility used to remove unwanted files Disk Cleanup/CCleaner, etc. ✓ (Accept any other valid response)	1	4

4.4.3	<p>ONE way to free up space on the HDD</p> <p>(1) Compress (Zip/Archive) files/folders/drive (<i>Do not accept any reference to removing files or defragging</i>)</p> <p>(2) Disable hibernation/Disable System Restore (on Windows 10)/ Change the settings of the virtual memory (Windows 7)</p> <p style="text-align: right;">✓ (Any one)</p>	1	
4.5	<p>TWO ways to solve the problem of a PC that will not boot</p> <p>(1) Re-seat all cards/modules on the motherboard</p> <p>(2) Boot up/Repair/Update/Reinstall the system from an external device, e.g. drive, USB stick or optical drive, etc.</p> <p>(3) Check for and replace faulty hardware</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	
4.6	<p>Disadvantage of convergence</p> <p>(1) Functionality of many devices is lost if the device fails</p> <p>(2) Difficult to upgrade only one part of the device</p> <p style="text-align: right;">✓ (Any one)</p>	1	
4.7	<p>TWO reasons to use note-taking software</p> <p>(1) Enables rapid capturing of ideas from a variety of inputs, e.g. video, audio, handwriting, etc.</p> <p>(2) Access on the go/Synchronises notes between devices</p> <p>(3) Realtime collaboration</p> <p>(4) Can synchronise notes and a sound recording</p> <p>(5) Handwriting recognition can convert 'handwritten' notes into typed text (when a stylus/finger is used on a touchscreen)</p> <p>(6) Enables effective searches for items in notes, i.e. text in diagrams</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	
4.8	<p>TWO functions of a web browser other than viewing web pages</p> <p>(1) Provides a facility to download files/content</p> <p>(2) Manages plug-ins/extensions</p> <p>(3) Stores the link/URL to recently visited web pages</p> <p>(4) Can store favourites/bookmarks/history</p> <p>(5) Provides a pop-up blocker</p> <p>(6) Enables caching</p> <p>(7) Has a feature to block websites</p> <p>(8) Manages data usage</p> <p>(9) Manages proxy settings</p> <p>(10) Acts as a file explorer/opens different types of files/documents</p> <p>(11) Enables video streaming</p> <p>(12) Allows SaaS (software as a service)</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	

4.9.1	<p>TWO challenges when updating software</p> <p>(1) May consume too much data (2) Automatic updates could slow down the computer/reduced performance (3) Features could be removed (4) Could be time consuming (5) Updates could be interrupted/corrupted (6) Cannot use software/applications while updating</p> <p><i>Accept:</i> Bugs/Security loopholes could be introduced to software/Software could become unstable</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	
4.9.2	<p>ONE way to ensure computer does not update while it is in use</p> <p>Set a suitable time for updates ✓ /Use Task Scheduler</p>	1	3
4.10	<p>Reason for not successfully saving with <i>Send to</i> and solution</p> <p>Reason: This action will only create a shortcut, and not save the actual file to desktop ✓</p> <p>Solution: (1) Copy and paste to the desktop (2) Open the document and save it to the desktop ('File Save As') (3) Click and drag to the Desktop if already saved elsewhere</p> <p style="text-align: right;">✓(Any one)</p>		2
4.11	<p>TWO solutions for voice recognition software not understanding</p> <p>(1) Change/Replace/Check the microphone (2) Adjust the gain on the microphone (3) Reduce background noise (4) Try to speak clearer/slower (5) Spend time training the voice recognition software (6) Update the driver/reset the hardware</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
			[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1	<p>TWO advantages of grid computing</p> <p>(1) Ability to use many combined resources (2) The use of a combination of resources saves time and money <i>(Do NOT accept 'saves time/money' only – must be qualified)</i> (3) Solves complex problems that need a huge amount of processing power (4) If one computer fails, the task can be taken over by another computer</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
5.2.1	<p>Identify devices in a network</p> <p>A – Switch/Router/Hub ✓ B – (Print/NAS) Server ✓ <i>(Accept main computer)</i> C – Router/Modem/Gateway ✓</p>	3	4
5.2.2	<p>Type of network for D</p> <p>LAN/HAN ✓ <i>(Accept client-server network)</i></p>	1	
5.3	<p>TWO reasons to turn off Bluetooth if connectivity is not required</p> <p>(1) May interfere with other wireless signals (2) Avoid being tracked (3) Reduces the possibility of hacking attacks/more secure (4) Prevent auto-connect (to other paired devices) (5) Saves battery power</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
5.4	<p>TWO changes to make a password more secure</p> <p>(1) Include at least one special character <i>(Accept an example of a special character)</i> (2) Include at least one upper case character (3) Change the repeating characters</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
5.5	<p>Reason for an OTP sent to your smartphone</p> <p>(1) To continue using the service/To ensure only the authorised/allowed user is using the account (2) Extra layer of security that will prevent use of the service if login details are stolen (3) 2-step/factor authentication</p> <p style="text-align: right;">✓ (Any one)</p>		1

5.6	Reason for using Bcc feature in e-mails To hide the addresses of some other recipients/To hide the fact that the e-mail was sent to more recipients ✓		1
5.7	Communication medium used for undersea cables (Optical) fibre ✓/Fibre (optic)		1
5.8	TWO disadvantages of FTP technology (1) More complex/Transfer process may be more complicated than using drag-and-drop methods (2) Modern web browsers are dropping support for FTP (3) In some cases, one has to resort to specialised software (4) FTP lacks security/can be vulnerable to hacking (5) Interruptions and restarting may slow down the process ✓✓ (Any two)		2
			[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1	<p>TWO ways to detect plagiarism in a learner's PAT</p> <p>(1) Search for specific sentences from the PAT on the internet to check for the original source/Check internet search history (2) Investigate if no references were given (3) Look for words or phrases that seem beyond the ability of the learner/Americanisms/Some sentences do not seem to fit with the style of the writing (4) Compare work from different learners for similarities (5) Check learner's previous files/folder activity or phases to verify authentic work (6) Use online plagiarism software (<i>Accept valid plagiarism detection services, e.g. Turnitin, SafeAssign, etc.</i>)</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
6.2	<p>TWO ways that make a chart/graph easier to interpret</p> <p>(1) Add a chart title/heading (2) Use legends (3) Use axes/series labels (4) Use gridlines (5) Add data labels (6) Add colours (7) Use trend lines (8) Select appropriate chart type</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
6.3.1	<p>TWO advantages of using drop-down form fields in an electronic questionnaire</p> <p>(1) User is restricted to options given (2) Easier to process the data from the responses (3) Reduce spelling errors (4) Quicker to answer the questionnaire than typing answers (5) Save space on the questionnaire</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	
6.3.2	<p>Option that should be removed from the drop-down box and reason why</p> <p>Longer than five days ✓</p> <p>Motivation Partial overlap with 'Three days or more' ✓</p>	2	4

6.4	TWO ways to ensure logical grouping and flow of information in a formal report (1) Use (numbered) headings/subheadings to group related information in paragraphs (2) Use a Table of Contents as an overview of the document structure (3) Note the order of precedence, e.g. never start with a conclusion ahead of findings, with findings ahead of project background, etc. (4) Remain consistent, e.g. each finding should be linked to the evidence in the same order <p style="text-align: right;">✓✓ (Any two)</p>		2
			[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1	<p>Definition of social engineering</p> <p>The act of misleading/manipulating people ✓ to obtain confidential information ✓ for fraudulent purposes</p>		2
7.2	<p>TWO negative implications for a company of employees using work computers for private tasks</p> <p>(1) Less time for work purposes/Waste of time/Lower productivity (2) Possible loss of revenue/profits for the employer (3) Risk of malware infecting computers (4) Employer may be liable for crimes committed from the workplace (5) <u>Data costs</u> for the employer may rise (6) Company information may be hacked (7) Reputational risk to the company</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
7.3	<p>ONE software technology used with cameras to identify criminals</p> <p>(1) Artificial Intelligence (AI) to enhance quality of images (2) Push technology to alert user when movement is sensed by the camera/to identify the size of moving object or suspicious movement (3) Facial recognition/thermal imaging (4) Number plate/license plate recognition</p> <p style="text-align: right;">✓(Any one)</p>		1
7.4	<p>TWO strategies to discourage cyberbullying</p> <p>(1) Report the offender (2) Block the offender from contacting them (3) Do not respond to taunts/messages from the bully (4) Avoid/Be selective in your use of social media/Do not initiate a discussion that could lead to cyberbullying of anyone (5) Do not make controversial posts that may open you up to harassment</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
7.5	<p>ONE reason for unknowingly trusting a program containing a Trojan</p> <p>Program containing a Trojan pretends to be a useful program ✓</p>		1

7.6.1	Term to describe furniture design in a working environment Ergonomics ✓	1	
7.6.2	Health benefit of the advertised chair (1) Provides back support to prevent backache (2) Allows the user to sit comfortably for longer periods/improves productivity (3) Adjustable height (4) Head rest for neck support ✓(Any one)	1	2
			[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1	<p>TWO methods to set the indents in a word processing document</p> <p>(1) Use the ruler (2) Use the paragraph dialog box/Indentation option in paragraph dialog box (3) Use a tab dialog box (4) Use a style (5) Use the Increase Indent/Decrease Indent button on the ribbon</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
8.2	<p>ONE example of formatting restriction in an electronic form</p> <p>(1) Prevent formatting changes (Read-Only) (2) Force all changes to be tracked (3) Allow comments only (4) Allow only the filling in of the form (5) Limit formatting to a selection of styles</p> <p style="text-align: right;">✓(Any one)</p>		1
8.3	<p>Reason why an existing file does not show in the file list/dialog</p> <p>(1) 'All files' option is not selected from the list of extensions in the Open dialog The file has a hidden attribute set (2) Wrong application/folder/drive is used when trying to find the file</p> <p style="text-align: right;">✓(Any one)</p>		1
8.4	<p>Purpose of a small square in the bottom right corner of cell C1</p> <p>To perform an Auto Fill/copy function ✓ by dragging or double-clicking</p>		1
8.5	<p>Reason for absolute cell reference in VLOOKUP table range</p> <p>So that if the VLOOKUP function is copied and pasted the range being checked will not change ✓/So that it can copy down correctly</p>		1
8.6	<p>Processing that was done to the original data</p> <p>(1) Sorting according to Department first ✓ (2) Then sorted by Number_in_Stock ✓</p> <p><i>(Note to marker: Allocate only one mark if reference has been made to sorting but is not specified)</i></p>		2

8.7.1	<p>Reason why a merge field cannot be inserted</p> <p>(1) The data source (Recipients) is not linked/connected/created/ selected (2) Incorrect data source</p> <p style="text-align: right;">✓ (Any one)</p>	1					
8.7.2	<p>Reason why some expected records do not display in Mail Merge</p> <p>(1) Errors in creating the filter or recipient list (2) Some data is missing from the data source</p> <p style="text-align: right;">✓ (Any one)</p>	1	2				
8.8.1	<p>Objects on which database queries can be based</p> <p>(1) Tables (2) Queries</p> <p style="text-align: right;">✓ (Any one)</p>	1					
8.8.2	<p>How to view the name of the object on which a query is based</p> <p>Open the query in Design View and view the name of the object in the Table row ✓ /The name of the object will appear above the field list in Design view</p>	1	2				
8.9	<p>Diagram of table in HTML</p> <div style="border: 1px solid black; width: 200px; margin: 10px auto; padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center; padding: 5px;">DESCRIPTION</td> </tr> <tr> <td style="width: 50%; padding: 5px;">Item 2</td> <td style="width: 50%; padding: 5px;">Item 1</td> </tr> </table> </div> <p>Mark distribution:</p> <p>(1) Correct diagram of a table structure: 2 rows x 2 columns, 1st row merged ✓ (2) Correct labels ✓ (3) Correct order: Description, Item 2, Item 1 ✓</p>	DESCRIPTION		Item 2	Item 1		3
DESCRIPTION							
Item 2	Item 1						
			[15]				

TOTAL SECTION B: 75

SECTION C: INTEGRATED SCENARIO**QUESTION 9**

9.1	<p>TWO reasons for using ICTs to record/manage health screening data</p> <p>(1) Capture data more efficiently/Devices can record data/Reduce queues when capturing data (2) Easier to share data (3) Easier to see patterns (4) Processing/Analysing the data is easier (5) Green computing, saves paper (6) Less handling of paper to reduce the spread of the virus/ ICTs can be easily sanitised</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
9.2.1	<p>TWO reasons for a tablet over a laptop for health screening</p> <p>(1) Tablet is smaller, which makes it more portable and easier to handle while moving around (2) Tablets generally have a longer battery life (3) Input can be faster with a touch screen (4) Graphical input, e.g. barcodes, QR codes (5) Tablets are easier to sanitise (6) Low-end tablets will generally be cheaper than laptops, in this context</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
9.2.2	<p>TWO specifications when buying a tablet</p> <p>(1) Wi-Fi/Cellular/Bluetooth connectivity (2) Front and rear facing cameras (3) Expandable storage/Size of internal storage (4) Battery life (5) (Screen) size/resolution (6) RAM (7) CPU (8) Software version/Current operating system</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	4

9.3.1	<p>ONE way for the tablet to communicate with the server</p> <p>(1) Can be connected via Wi-Fi/Wi-Fi access point (2) Use a USB cable to connect the tablet directly to the server</p> <p style="text-align: right;">✓ (Any one)</p>	1	
9.3.2	<p>TWO ways to solve the problem of the tablet not connecting</p> <p>(1) Install an access point closer to the where the tablet is used (2) Restart network devices (3) Move the tablet to a better line of sight to the access point (4) Install range extender/repeater/boost signal strength (5) Set tablet to Wi-Fi Always On/connect automatically/by default</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	3
9.4.1	<p>Spreadsheet feature to remove unnecessary spaces in the headings</p> <p>Find and Replace ✓</p>	1	
9.4.2	<p>Spreadsheet feature to automatically highlight a value</p> <p>Conditional formatting ✓</p>	1	
9.4.3	<p>Spreadsheet function to determine number of learners with a cough</p> <p>COUNTIF ✓</p>	1	3
9.5.1	<p>THREE improvements that could be made to Date of birth field</p> <p>(1) Change Data Type to Date/Time (2) Set Format to Short/Long date (3) Show Date Picker (4) Add a validation rule to limit input to relevant dates (5) Use an input mask to ensure correct format</p> <p style="text-align: right;">✓✓✓ (Any three)</p>	3	
9.5.2	<p>Reason for filling in Description options in database table</p> <p>Enables understanding the data required for the records in the database ✓ /Maintenance purposes</p>	1	4

9.6	<p>TWO reasons to make a cloud backup of data</p> <p>(1) Data can be accessed from any device with access to the internet anywhere in the world (2) Backup is at a remote location (<i>Accept any reference to the reasons for offsite backup, e.g. theft, fire, virus, etc.</i>) (3) More secure than removable drives/No physical damage</p> <p><i>(Do NOT accept: Free up space on the hard drive)</i></p> <p style="text-align: right;">✓✓ (Any two)</p>		2
9.7	<p>TWO ways for school to share health information electronically</p> <p>(1) Attached the data to an e-mail/WhatsApp/SMS/MMS/Fax (2) Provide access/send a link to the data in a folder on a shared drive (3) Provide the District Office with an electronic storage medium that contains the data (4) Upload data to a central database (via an app)</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
9.8.1	<p>Service that makes sharing of long web addresses easier</p> <p>URL shortener ✓ e.g. Bitly, TinyURL, etc. (<i>Accept any other valid response</i>)</p>	1	
9.8.2	<p>TWO ways in which fake information is made to seem believable</p> <p>(1) Experts are incorrectly cited or referenced (2) Pretends to be from a reliable author (3) Information presented in a professional/technical format that seems to be reliable (4) Sometimes shared by people you normally trust on social media (5) 'Made up' statistics made to seem believable</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	
9.8.3	<p>TWO ways to avoid being fooled by fake information</p> <p>(1) Check information accuracy against other sources (2) Check the credibility of the author (3) Look for bias (4) Use checking services such as Snopes (5) Check the spelling and grammar</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	5
			[25]

QUESTION 10

10.1.1	<p>Definition of m-learning</p> <p>Education and training delivered <u>over the internet</u> ✓ using <u>mobile devices</u> such as tablets/laptops/smartphones ✓ that can be accessed <u>anywhere/anytime/at home</u> ✓</p>	3	
10.1.2	<p>TWO kinds of e-learning resources</p> <p>(1) Online lessons/virtual meetings/streaming of lessons/webinars, etc. (2) (Educational) videos/images (3) E-books/electronic notes, etc. (4) Online quizzes and tests (5) Simulation apps (6) Podcasts/audio files/pre-recorded lessons (7) Tutoring apps</p> <p><i>(Note to marker: Do NOT accept examples such as: Zoom, Google Classroom, etc.)</i></p> <p>✓✓ (Any two)</p>	2	
10.1.3	<p>TWO examples of virtual reality (VR) enhancing learning</p> <p>(1) Go on virtual 3D educational tours (2) Simulate science experiments, etc. (3) Can develop skills through simulations, e.g. flight simulator</p> <p>✓✓ (Any two)</p>	2	
10.1.4	<p>TWO word processing features for feedback</p> <p>(1) Comments (2) Track changes (3) Highlights/Different font colours to indicate issues (4) Hyperlinks/Embed links</p> <p>✓✓ (Any two)</p>	2	9
10.2	<p>Term for concept of lack of access to ICTs</p> <p>Digital divide ✓</p>		1

10.3.1	<p>TWO advantages of using the ISP for the website</p> <p>(1) No need for extra local storage space/server (2) Maintenance of hardware/software is outsourced (3) Reduced downtime (4) Separate internal and external networks (5) School does not need to have a server with a fixed IP address (6) Easily scalable</p> <p style="text-align: right;">✓✓ (Any two)</p>	2	
10.3.2	<p>TWO reasons for image not displaying in a browser</p> <p>(1) Picture resource is not available/deleted (2) Picture is in another folder (3) Browser security may be blocking the picture (4) Browser settings do not show pictures to limit data usage (5) Browser does not recognise the file type associated with the image</p> <p><i>(Note to marker: Do not accept any reference to HTML code or misspelt file extension.)</i></p> <p style="text-align: right;">✓✓ (Any two)</p>	2	
10.3.3	<p>Reason why website displays differently on smartphone screens</p> <p>Layout of the webpage may not have been designed for a smartphone/ smaller screen ✓</p>	1	5
10.4.1	<p>Reason for having broadband connection for e-learning</p> <p>(1) High speed access to the internet (2) Always on (3) Large volumes of data</p> <p style="text-align: right;">✓ (Any one)</p>	1	
10.4.2	<p>Advantage of unshaped line for e-learning</p> <p>No other services will be given preference over downloading learning material. ✓/Line speed will not be negatively affected</p>	1	
10.4.3	<p>A way to avoid information overload</p> <p>(1) Give priority to certain tasks (2) Take regular breaks from your devices/Do not check your smartphone all the time (3) Organise school work according to subject (4) Limit the number of links followed</p> <p style="text-align: right;">✓ (Any one)</p>	1	3

10.5	<p>TWO criteria to determine if devices are usable for learning</p> <p>(1) Devices are in good working order (2) Devices are not too old/Compatible with current software/Compatible with school programs (3) Have enough storage space for necessary software (4) All the connected hardware is included, e.g. mouse, keyboard, charger, etc. (5) OS/Application software is licenced</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
10.6	<p>TWO technologies used to control stock</p> <p>(1) RFID tags (2) Barcodes (3) Scanners to read tags/barcodes (4) Database (of stock items)</p> <p style="text-align: right;">✓✓ (Any two)</p>		2
10.7.1	<p>ONE reason why a database is more suitable than a spreadsheet</p> <p>(1) Ease of capturing through forms (2) Queries based on criteria (3) Easy to do reports (4) Use of functions/calculations in a summary/report (5) Data does not require extensive 'number-crunching'/calculations</p> <p style="text-align: right;">✓ (Any one)</p>	1	3
10.7.2	<p>ONE way to transfer graph data from database to spreadsheet without retyping</p> <p>Import the data from a database/Export the data to a spreadsheet ✓ / Copy and paste the data to a spreadsheet</p>	1	
10.7.3	<p>ONE way to ensure that graph updates in word processor if spreadsheet data changes</p> <p>Link the graph ✓ /Select update</p>	1	
			[25]

TOTAL SECTION C: 50

GRAND TOTAL: 150