

SECTION A

Question 1

Write down only the *number* of the description from Column A, and next to it the correct matching *capital letter* from Column B, for example 1.11 T.

Column A		Column B
1.1	A technology used to find out your position on the earth's surface	A. Citation
1.2	A type of digital camera designed for professional use	B. Primary key
1.3	A computer that is connected to a network and that uses resources from a server	C. Switch
1.4	A data type in Access that can be used to send one to a website	D. OSS
1.5	A type of data field in Access that cannot be left empty or blank	E. POS
1.6	A type of port that sends high definition video and audio to a monitor	F. HDMI
1.7	A type of server used to control and monitor Internet access in a network.	G. Proxy
1.8	A type of software that may be freely used, modified and distributed	H. Memo
1.9	A field or placeholder added to text in a document to indicate where the material was obtained from	I. VGA
1.10	A type of malware that becomes active when the user opens and runs the program containing the malware	J. GPS
		K. OCR
		L. Client
		M. URL
		N. Trojan
		O. Template
		P. ISO
		Q. Worm
		R. Hyperlink
		S. DSLR

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Question 2

State whether each of the following statements is TRUE or FALSE.

If a statement is FALSE, then write down the word 'False' and, next to it, the word(s) which should replace only the underlined word(s) to make the statement TRUE.

Note: No marks will be awarded if 'False' is given without a suggested replacement.

Example 1: A printer is an example of an output device.

Answer: True

Example 2: A printer is an example of software.

Answer: False – hardware.

- 2.1 Most organisations that have networks and Internet access have a/an EULA that outlines the rights and responsibilities of their users.
- 2.2 A NIC protects your computer from unauthorised access via the Internet.
- 2.3 In Access, a required value is a value that is automatically allocated to a field when a new record is created.
- 2.4 The term metadata refers to additional information about a file and its contents, and that is stored as part of the file.
- 2.5 Multifunction printers can create solid objects from a digital model of the item by adding layers of material on top of one another.

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Question 3

Identify the correct answer for each question. Write down only the *number* of each question, and next to it the single *capital letter* which represents the best answer, for example 3.11 A.

- 3.1 Which one of the following specifications is common to both monitors and printers?
- A. Response time
 - B. Contrast ratio
 - C. Monthly duty cycle
 - D. Resolution
- (1)

- 3.2 Which one of the following spreadsheet functions can be used to determine the number of learners in this spreadsheet extract?

	A	B	C
1	LEARNER	AGE	
2	Petro	16	
3	Andiswa	15	
4	Michael	16	
5	Simthandile	17	

- A. =SUM(B2:B5)
 - B. =COUNT(A2:A5)
 - C. =COUNTA(B2:B5)
 - D. =COUNTIF(B2:B5,">15")
- (1)
- 3.3 Which one of the following is NOT a typical step in a software installation wizard?
- A. Agreeing to the licence agreement
 - B. Making a backup copy of the installation media
 - C. Adding a shortcut to the desktop
 - D. Choosing the folder in which to install the program
- (1)
- 3.4 The image shown below is scanned to obtain the information stored in it. What do we call this image?



- A. QR code
 - B. RFID tag
 - C. Barcode
 - D. SD card
- (1)

- 3.5 Which one of the following factors is the LEAST important for determining the general 'power' or performance of a computer?
- A. The size of the hard drive
 - B. The speed of the CPU
 - C. The number of USB ports
 - D. The amount of RAM (1)
- 3.6 Which one of the following extensions indicates a file that CANNOT be opened by a program in the Microsoft Office suite?
- A. .pptx
 - B. .accdb
 - C. .rtf
 - D. .mpeg (1)
- 3.7 Which one of the following is NOT an Internet connection technology?
- A. iOS
 - B. LTE
 - C. ADSL
 - D. HSDPA (1)
- 3.8 Which one of the following statements about network cables is FALSE?
- A. UTP cable is slower than fibre optic cable.
 - B. Fibre optic cable is easy and cheap to install.
 - C. The most common cable used in LANs is UTP.
 - D. Fibre optic cable is mainly used as a backbone to connect LANs. (1)
- 3.9 Which one of the following is NOT a *dedicated device*?
- A. GPS
 - B. E-reader
 - C. ATM
 - D. iPad (1)
- 3.10 Which one of the following refers to a type of text file that is often used to exchange data between programs?
- A. PDF
 - B. HTML
 - C. CSV
 - D. DOC (1)

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SECTION B

Question 4: System Technologies

4.1 Consider the following advertisement for a computer and answer the questions that follow:

Intel Core i3 3.4 GHz Asrock Motherboard 2 GB Graphics Card 4 GB DDR RAM 500 GB Hard Drive DVD Super Multi Writer 18.5" Topview Monitor, 5 ms Response Time Wireless Keyboard & Mouse Windows 10 Office 365, 1 TB Cloud Storage
--

- 4.1.1 To which hardware component does the specification 'Intel core i3 3.4 GHz' refer? (1)
- 4.1.2 Briefly describe the basic function of a motherboard, and explain what the DIMM slots in a motherboard are used for. (2)
- 4.1.3 The sizes of the memory (4 GB) and the hard drive (500 GB) are both measured in Gigabytes.
- (a) Write down the size of the hard drive in Terabytes. (1)
- (b) Briefly explain why a computer needs much more hard drive space than memory. (2)
- 4.1.4 Give a type of optical media that this computer could write to, other than a DVD disc. (1)
- 4.1.5 Which unit of measurement is used to measure the screen size of the monitor? (1)
- 4.1.6 Give ONE disadvantage of wireless input devices (e.g. keyboard and mouse) over their wired counterparts, apart from their purchase cost. (1)
- 4.1.7 Which output device would you have to add to this computer if you wanted to use it for video conferencing? (1)

- 4.1.8 The office suite comes with 1 TB Cloud Storage.
- (a) Give TWO advantages of online storage. (2)
 - (b) Name ONE example of an online storage service, besides Google Drive. (1)
- 4.1.9 Name the component that would need to be upgraded to allow more programs and data to be loaded and processed at any one time . (1)
- 4.2 Adobe Flash player is an example of a *plug-in* program. What is the function of a plug-in program? (1)
- 4.3 It is important to be aware of the system requirements of software before you install it.
- 4.3.1 Give ONE example of a typical hardware system requirement. (1)
 - 4.3.2 Explain why the hardware requirements for installing software are less important if the software is *online* or *cloud-based*, e.g. Google Docs. (1)
 - 4.3.3 Give TWO general disadvantages of online software. (2)
- 4.4 A software 'bug' in a program sometimes causes a program to 'freeze', i.e. stop responding.
- 4.4.1 Give ONE general way to remove software bugs. (1)
 - 4.4.2 Briefly describe ONE correct way to completely remove a program from your computer, without referring to menu options or mouse clicks. (1)
- 4.5 In order to protect the data on his computer your father purchased a UPS and also made a backup.
- 4.5.1 What does a UPS protect a computer from? (1)
 - 4.5.2 Give TWO tips for a good backup policy. (2)

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Question 5: Network and Internet Technologies

- 5.1 It is important to choose an Internet connection method that matches your needs.
- 5.1.1 Give ONE disadvantage or limitation of using ADSL. (1)
 - 5.1.2 Briefly explain what a 'hotspot' is in terms of connecting to the Internet. (2)
- 5.2 A smartphone can act as a modem for connecting your computer to the Internet.
- 5.2.1 Give the name of a cellular technology that allows a smartphone to connect to the Internet. (1)
 - 5.2.2 Give ONE way in which a smartphone can be linked to a computer, besides using a hotspot. (1)
- 5.3 Social networking sites such as Facebook and Instagram are very popular.
- 5.3.1 Explain why it is important to review and, if necessary, change the default settings when using these sites. (1)
 - 5.3.2 Schools sometimes block social networking sites to prevent learners from being distracted from their work.
Give ONE *other* reason why schools block these sites. (1)
- 5.4 RSS feeds are commonly used for news and blog websites.
- 5.4.1 How does an RSS reader program make it easier to keep up with news from multiple websites? (1)
 - 5.4.2 Give ONE disadvantage of using RSS feeds, other than the fact that not all sites support RSS. (1)
- 5.5 When someone tried to access the website <http://www.absa.mobi/>, the following message was received:
- 'Unfortunately we cannot detect your device.'
- 5.5.1 With what types of devices are 'mobi' websites associated? (1)
 - 5.5.2 Give ONE way in which mobi sites try to improve the browsing experience for the types of devices for which they were designed. (1)
- 5.6 Briefly describe what spyware tries to do once it is installed on a computer. (2)
- 5.7 Give ONE general technique that can be used to search for an e-mail message, especially when it is stored with a large number of other e-mail messages. (1)

5.8 The following is an example of a CAPTCHA:



What is the purpose of CAPTCHA technology? (1)

5.9 Give TWO disadvantages or limitations of blogging to share information and ideas. (2)

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Question 6: Information Management

6.1 Consider this task definition and answer the questions that follow:

The school wants to offer extra classes for learners who are struggling with Mathematics.

6.1.1 Suggest a suitable *closed question* that could be asked to get information to complete the task. (1)

6.1.2 Suggest a suitable *open-ended question* that could be asked to get information to complete the task. (1)

6.2 Online surveys are often used to get information from people.

6.2.1 Explain the difference between a *target group* and a *sample group* when conducting a survey. (2)

6.2.2 Give ONE advantage of conducting a survey *online*, as opposed to face-to-face. Do not include the speed or the ease with which the data is collected in your answer. (1)

6.3 Give an advantage of using an import / export process to transfer data from one application to another, rather than simply copying and pasting the data between the two applications. (1)

6.4 Access is used to manage data.

6.4.1 Briefly explain what the term *append* means, in terms of importing records into an *Access* database. (1)

6.4.2 Give ONE tool provided by *Access* that allows you to extract only certain records from a table. (1)

6.5 What is *plagiarism*? (1)

6.6 What is the *thesaurus* function of a word processor used for? (1)

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Question 7: Social Implications

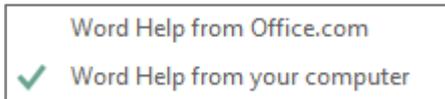
- 7.1 Give the general term used to describe the situation where we have so much information available that it becomes difficult to 'take in' and process all the data. (1)
- 7.2 Cybercriminals often use *social engineering* techniques to bypass security systems.
- 7.2.1 Explain what the term social engineering refers to in this context. (1)
- 7.2.2 Give the common name for the social engineering technique that uses e-mail to achieve its goal. (1)
- 7.3 Explain why creating a *contact group* in your e-mail program can help you work more efficiently. (1)
- 7.4 The Print command in a program like *Word* has different printing options. Give TWO print options that can be used to save paper. (2)
- 7.5 A friend complains that she is being bullied by someone she met in a chat room.
- 7.5.1 What is a chat room? (1)
- 7.5.2 Give ONE way to reduce the risk of becoming a victim of cyber-bullying. (1)
- 7.6 Briefly explain why increasing use of the Internet has had a negative effect on some businesses. You may use an example to illustrate your answer. (1)

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Question 8: Solution Development

- 8.1 The File – Save As command in *Word* allows one to change the file type of a document.
- 8.1.1 Explain why it is sometimes necessary to change the file type of a document. (1)
- 8.1.2 Give ONE advantage of saving a *Word* document in a PDF format. (1)
- 8.2 Name a spreadsheet function or an operator that could be used to calculate the value of 2^5 . (1)

8.3 The following screenshot shows the two types of help available in *Word* ('Word Help from your computer' is currently selected):



Give TWO reasons why it might be better to use the 'Word Help from Office.com' option. (2)

8.4 Hash symbols (#####) sometimes appear in a cell in a spreadsheet. Explain how to fix the problem. (1)

8.5 Assume that you are given the following in a spreadsheet:

	A	B	C	D	E	F	G	H	I
1	Half-hourly time slots								
2	08:00	08:30							

Briefly describe how you can make the spreadsheet appear like the following example without doing any typing?

	A	B	C	D	E	F	G	H	I
1	Half-hourly time slots								
2	08:00	08:30	09:00	09:30	10:00	10:30	11:00	11:30	12:00

Note: it is not necessary to give the actual mouse clicks required. (2)

8.6 State what the spreadsheet function/formula =RAND()*5 will return, i.e. what the answer will be. (2)

8.7 It is important that data entered into a database should be both *valid* and *correct*.

8.7.1 Give TWO tools that can be used in the design of a database to help ensure that the data entered is *valid*. (2)

8.7.2 Briefly explain how it is possible for data entered in a database to be *valid* and yet still be *incorrect*. You may use an example to illustrate your answer. (2)

8.8 Give ONE advantage of using a Form rather than a Table to enter data in an *Access* database. (1)

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SECTION C

The Grade 10–12 learners come to the Senior Computer Lab after lessons to do research for school projects and to upgrade their computer skills. The lab contains one server, 30 networked computers, an old dot matrix printer and a flatbed scanner.

Question 9: Integrated Scenario

- 9.1 The learners are always eager to get to the better-performing computers first.
- 9.1.1 Name TWO hardware items that generally have a big effect on the performance of a computer. (2)
- 9.1.2 Explain why the computers that the learners use do not need to be as powerful as the server. (1)
- 9.2 One learner claimed that she did not need a computer, as she already had a smartphone running *Android 5.1 Lollipop*.
- 9.2.1 What type of system software is Android 5.1 Lollipop? (1)
- 9.2.2 Name ONE feature or function generally found on a smartphone that you will not generally find on a desktop computer, apart from the ability to make and receive phone calls. (1)
- 9.2.3 Give the term used to describe the ‘bringing together’ or combining of multiple technologies into a single, multi-purpose device like a smartphone. (1)
- 9.3 The learners use the scanner to convert hard copies into digital format.
- 9.3.1 Name ONE software setting commonly used to adjust the quality of a scanned image. (1)
- 9.3.2 Explain why the use of OCR software (with scanners) can save a lot of time. (2)
- 9.4 Some of the older monitors do not display very well.
- 9.4.1 Which specification of a monitor defines the relationship between the width and the height of the screen? (1)
- 9.4.2 Give the specification of a monitor that defines how quickly it updates its pixels and state the unit in which this is usually measured. (2)
- 9.5 The computer teacher never types a password to log in – she just presses her thumb on a small button-like pad on her laptop.
- 9.5.1 Name the type of input method described above. (1)
- 9.5.2 Give ONE advantage of using this type of log in, over more traditional methods such as typing a password. (1)

9.6 The school wants to buy either a data projector or an interactive whiteboard for the lab. Give TWO advantages of choosing an interactive whiteboard over a data projector, besides any cost issues. (2)

9.7 Examine the following specifications for a new printer and answer the questions that follow:

Mono Laser 4 in 1 Up to 4800 dpi 802.11b/g/n Ethernet Hi-Speed USB 2.0 20 ppm Eco Mode
--

9.7.1 Will this printer be able to make photocopies in colour?
Clearly motivate your answer. (2)

9.7.2 What aspect of the printer does the specification *4800 dpi* measure? (1)

9.7.3 What is the advantage of a printer that has a *802.11b/g/n* specification? (1)

9.7.4 Give the unit in which the speed of this printer is measured. (1)

9.7.5 What is the benefit of a printer that has *Eco Mode* as a feature? (1)

9.7.6 *Drivers* are included on the CD that comes with the printer.
Briefly explain the function of driver software. (1)

9.8 The teacher prefers to make backups on an external hard drive rather than on DVDs.

9.8.1 Give TWO advantages of using an external hard drive for backups, over optical media such as DVDs. (2)

9.8.2 Briefly explain why a 2.5" external hard drive is easier to use than a 3.5" drive, apart from the fact that it is physically smaller. (1)

9.9 One of the computers is running out of storage space. Someone suggested that the hard drive should be *defragmented* or *formatted*.

9.9.1 *Defragmenting* the drive will not make more space available on it.
Briefly explain what happens with the files on the hard drive during the defragmentation process. (1)

9.9.2 *Formatting* the drive will certainly make a lot of space available on it.
Briefly explain why formatting a drive is generally not the best way to make more space available on it. (1)

9.9.3 Name a utility program in Windows that can be used to make more space available on a drive. (1)

- 9.10 Some of the computers cannot open *Word* documents that have a .docx file extension, even though Microsoft Office is installed on all the computers.
- 9.10.1 Give the most likely reason why the computers cannot open these documents. (You may assume that the documents are not damaged or corrupt in any way). (1)
- 9.10.2 Briefly explain how *exporting* would help to solve the problem. (1)
- 9.10.3 Give TWO problems that may arise if online software is used as a replacement for Microsoft Office. (2)
- 9.11 One of the learners suffers from poor eyesight, and another cannot use his fingers properly to control a mouse.
- 9.11.1 Name the additional hardware item, not usually included with desktop computers, that would be needed to use a 'Text to speech' utility. (1)
- 9.11.2 Give ONE other feature provided by the operating system (apart from a 'Text to speech' utility) that would help users with poor eyesight to use a computer more effectively. (1)
- 9.11.3 Name ONE type of pointing device that could be used by people who lack control over ('struggle to use') their fingers. (1)
- 9.12 A typing tutor program stopped working exactly one month after it was installed.
- 9.12.1 Give ONE reason why the program might have stopped working. (You may assume that the software is not faulty). (1)
- 9.12.2 A different typing tutor was installed on all the computers, under a site license.
May a learner use the site license to install this program on a home computer? Explain your answer. (1)
- 9.13 An educational software package was purchased from Amazon.com, an online retail store, for use in the lab.
- 9.13.1 Give ONE advantage and ONE disadvantage of online shopping.
Clearly indicate which is the advantage and which is the disadvantage in your answer. (2)
- 9.13.2 A *product key* had to be entered during the installation of the software.
Briefly explain how the use of a product key can help prevent software piracy. (1)

- 9.14 It is important that learners should know basic security measures to protect data on a computer.
- 9.14.1 Briefly explain how the use of a *file attribute* can prevent a file from being 'seen' or viewed in a file manager such as Windows Explorer. (1)
- 9.14.2 The use of 'strong' passwords is an important part of computer security. Give ONE reason why the following can not be regarded as a 'strong' password:
jOhN (1)
- 9.14.3 Give ONE tip on the correct use of passwords, besides choosing 'strong' passwords. (1)
- 9.15 There are a lot of untidy cables around the server. One of the learners suggested that the current wired LAN be converted to a WLAN (wireless LAN). Give TWO disadvantages of a wireless LAN, as compared to a LAN that uses cables. (2)
- 9.16 A 'Skype' session was held with a neighbouring school to demonstrate the use of VoIP software.
- 9.16.1 What is VoIP software used for? (1)
- 9.16.2 Give ONE advantage of using VoIP software, other than any answer you gave to question 9.16.1. (1)
- 9.17 A reunion is planned for past CAT learners, and invitations must be sent out. Give ONE advantage and ONE disadvantage of using the school's official Facebook page, rather than e-mail messages, to send out the invitations. Clearly indicate which is the advantage and which is the disadvantage in your answer. (2)

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TOTAL: 150