

Study Opportunities

September 2014

COMPUTER APPLICATIONS TECHNOLOGY

Grade 12

Paper 2 – Written

TIME: 3 HOURS

MARKS: 150

This question paper consists of **15** pages (cover page included)

Instructions and information

1. This question paper consists of three sections: Section A (25 marks), Section B (75 marks) and Section C – the integrated scenario (50 marks).
 2. Answer all the questions.
 3. Read the questions carefully, taking note of the mark allocations. In general, a mark is allocated per fact. A question for TWO MARKS would therefore require TWO FACTS, etc.
 4. Number the answers according to the numbering system used on this question paper.
 5. Leave a blank line after EACH sub-question.
-

SECTION A

Question 1

Identify the correct answer for each question. Write down along the left side of your page only the *number* of each question, and next to it the single *capital letter* which represents the best answer, for example 1.11 A:

- 1.1 Which one of the following is an input device?
A. webcam
B. headphones
C. flash drive
D. data projector (1)
- 1.2 Which one of the following is NOT a feature of a dedicated backup program?
A. You can set a time when to back up the files.
B. You can choose to backup only files that have changed since the last backup.
C. You can set the backup program to format the hard drive before backing it up.
D. The files can be compressed on the backup media, to save space. (1)
- 1.3 Which one of the following statements about word processor file types is FALSE?
A. Documents with an .RTF extension can be opened with most word processors.
B. If you save a *Word* document with a .TXT extension, all formatting will be lost.
C. A *Word* document with a .DOCX extension can be saved as a PDF file.
D. Documents created and saved by newer versions of a word processor can always be opened by an older version of the same word processor. (1)
- 1.4 Which one of the following utilities can be used to make more storage space available by removing temporary files?
A. Disk defragmenter
B. Backup software
C. Disk cleanup
D. Recycle bin (1)

- 1.5 Which one of the following will NOT help to reduce eyestrain when you are working at a computer?
- A. Using ergonomically designed input devices
 - B. Reducing reflections due to improperly placed screens
 - C. Wearing glasses to help reduce eyestrain
 - D. Looking away from the screen every now and then (1)
- 1.6 Which one of the following is NOT an example of *metadata*?
- A. The author of a document
 - B. The styles used in a word processing document
 - C. The date on which a document was last modified
 - D. The resolution of an image stored as a graphics file (1)
- 1.7 Which one of the following statements on social networking and virtual communities is FALSE?
- A. Social networking sites can make money by selling information about their users.
 - B. Waze helps you find friends by using a 'check-in' option, aided by GPS technology.
 - C. There is a limit to the number of characters that can be in a single Twitter message.
 - D. Social networking services are changing the way in which people conduct business. (1)
- 1.8 Which one of the following is an example of a popular e-reader?
- A. iPad
 - B. Notebook
 - C. Phablet
 - D. Kindle (1)
- 1.9 Which one of the following refers to a situation where users are tricked into clicking on an item on a web page which acts as a concealed link?
- A. Click-jacking
 - B. Spoofing
 - C. Pharming
 - D. Phishing (1)
- 1.10 Which one of the following does not logically belong with the others (is the 'odd one out')?
- A. Mozilla Firefox
 - B. Internet Explorer
 - C. Google Chrome
 - D. Outlook Express (1)

[10]

Question 2

State whether you think each of the following statements is TRUE or FALSE. If you think the statement is FALSE, then write down the word 'False' and next to it the replacement of the underlined word(s) to make the statement TRUE.

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 A trackball is a pointing device that may be used with GUI type of software.

2.2 The image alongside is an example of a biometric test used to determine whether or not it is a human being that is interacting with the computer:



2.3 BYOD uses small radio devices to store and transmit data.

[5]

Question 3

Write down along the left side of your page only the *number* of the question from Column A, and next to it the correct matching *capital letter* from Column B, for example 3.11 T.

Column A		Column B
3.1	Software used to convert hardcopy text into digital text that can be edited	A. VoIP
3.2	Example of an operating system	B. GPS
3.3	Technology for sending voice communications over the Internet	C. ROM
3.4	A standard that allows devices like Smartphones to connect wirelessly simply by touching them together or bringing them into close proximity	D. DPI
3.5	Type of memory where a computer's start up instructions are stored	E. NFC
3.6	Unit in which the resolution of a scanner is measured	F. OS X
3.7	Data type (in Access) used to store graphics, sound and video	G. IM
3.8	Method of transferring money electronically via the Internet	H. EFT
3.9	Technology used in mobile devices to determine your location	I. DIMM
3.10	Policy which defines users' rights and responsibilities within a network	J. RAM
		K. OCR
		L. OSS
		M. AUP
		N. MICR
		O. HTML
		P. OLE

[10]

SECTION B

Question 4: System Technologies

- 4.1 Input is the first step in any information processing system.
- 4.1.1 Name the other two steps in the information processing cycle, apart from the need to store or transfer data. (2)
 - 4.1.2 Explain why it is important for input devices to be *ergonomically* designed. (1)
 - 4.1.3 Briefly describe one drawback or limitation associated with using a *touch pad*. (1)
 - 4.1.4 Give an example of a type of input device that would help a visually impaired or blind person enter data. (1)
- 4.2 Buying a computer can be expensive, so it is important to make the right decisions.
- 4.2.1 Name the TWO hardware components that are most important for the effective working of a computer in general, apart from the storage devices (hard drive, etc.). (2)
 - 4.2.2 SSDs are slowly becoming more widely recognised as an alternative to the HDD (Hard Disk Drive) in certain situations.
Give TWO reasons why SSDs have NOT replaced HDDs as a computer's main storage device, even though SSDs do have many advantages. (2)
- 4.3 A LED monitor is advertised with the following specifications:
- 23" 16:9 Wide Screen
VGA and HDMI output
- 4.3.1 Give the unit in which the 23" specification is measured. (1)
 - 4.3.2 State what the specification 16:9 refers to. (1)
 - 4.3.3 Give ONE reason why HDMI has an advantage over VGA as a means of output. (*Do not simply give 'better image quality' as your answer.*) (1)
- 4.4 Give ONE advantage and ONE disadvantage of taking digital photos at the maximum resolution that is possible for the digital camera. (2)
- 4.5 Give the main benefit of open source software, as compared with proprietary (bought) software, apart from any cost issues. (1)

- 4.6 A user installs a second hard drive (E-drive) in his desktop computer to store backup files. The original files are stored on the C-drive on the same computer. Examine the following description of a file and answer the questions that follow:
- E : \ BACKUP \ ACCOUNTS \ APRIL.ZIP**
- 4.6.1 Give the common name for the 'succession' of folders that leads to the location of the file APRIL.ZIP. (1)
- 4.6.2 Explain the possible advantage of making this file *read-only*. (2)
- 4.6.3 The file APRIL.ZIP has been 'zipped', which means that its size has been reduced. What is the advantage of a smaller file size? (1)
- 4.6.4 Explain why it is not a good idea to store backup files on the same computer as the original files. (1)
- 4.7 Apart from their core functions, operating systems also provide other useful programs, collectively known as 'utilities'.
- 4.7.1 Briefly explain what a *scheduler* program is used for. (1)
- 4.7.2 Give any ONE criteria that a file manager like Windows Explorer can use to search for a file, besides the name of the file. (1)
- 4.7.3 Give the shortcut key combination that can be used to open the Task Manager, and state what this utility is most often used for. (2)
- 4.8 Give ONE way in which files could be transferred from a laptop to a smartphone, besides the use of a USB cable. (1)

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Question 5: Internet and Network Technologies

- 5.1 Web-based applications are run directly from servers on the Internet, in what is commonly referred to as 'cloud computing'.
- 5.1.1 Describe what a server is, in terms of its basic function in a network. (1)
- 5.1.2 One of the advantages of web-based applications is that they can be accessed from any computing device anywhere in the world, if an Internet connection is available.
- Give another TWO good reasons for choosing web-based applications, over software that is installed on your own local computer. (2)
- 5.2 The process whereby web browsers temporarily store recently visited pages and other web content on disk is known as *caching*.
- Give the main reason for using web caching. (1)
- 5.3 Give TWO practical examples of how resources are shared on a network. (2)

5.4 ADSL is the preferred means of connecting to the Internet via a fixed telephone line, i.e. NOT wirelessly.

5.4.1 The ADSL router pictured alongside has a small aerial attached to it.



Briefly explain the purpose of the aerial in an ADSL router.

(1)

5.4.2 Give ONE potential disadvantage of ADSL, besides the fact that it is not a mobile solution.

(1)

5.4.3 Suggest a type of wireless technology that could be used, if a fixed telephone line were not available.

(1)

5.5 Constant vigilance and awareness of the latest criminal methods are key to using the Internet safely.

5.5.1 Explain what keyloggers are and why they are so dangerous.

(2)

5.5.2 Briefly describe what a Trojan is in the context of its use by computer criminals.

(1)

5.6 A number of podcast apps are available on both the Android and the iPhone platforms.

5.6.1 Give another word for the term 'platform', in the context of the above statement.

(1)

5.6.2 Describe in general what a 'podcast' is.

(2)

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Question 6: Information Management

6.1 Consider the following two different ways of requesting the same piece of information, in a survey to gauge people's use of office application software:

A

Choose TWO options by placing a 'X' in the relevant boxes:

Which program in the MS-Office suite do you enjoy working with most?

Access	<input type="checkbox"/>
Publisher	<input type="checkbox"/>
Outlook	<input type="checkbox"/>
PowerPoint	<input type="checkbox"/>

B

Which program in the MS-Office suite do you enjoy working with most?

Indicate your response by writing down TWO relevant program types in the spaces provided:

.....

.....

6.1.1 Explain what the advantage would be in using version B, rather than version A, for this particular survey question.

(1)

6.1.2 Give TWO reasons why it is better, in general, to use 'closed' questions in setting up questionnaires, as in version A above.

(2)

- 6.2 In the Information Age in which we live, much of the information that we deal with is already in digital format.
Give TWO advantages of having information that is already in digital format. (2)
- 6.3 Both spreadsheets and databases are powerful tools in working with data. Spreadsheets do, however, have some limitations compared to databases.
Give TWO reasons why databases represent a better way of working with some forms of data. (2)
- 6.4 It is important that data entered in a database should be accurate and error-free.
Give TWO database tools that can be used to ensure that the data entered in a field is valid. (2)
- 6.5 Briefly explain what a *delimiter* is in the context of importing a text file of peoples' names and addresses into *Access*. (1)

[10]

Question 7: Social Implications

- 7.1 Information and Communications Technology is often criticised as being very expensive for companies.
7.1.1 Mention TWO ways in which ICT can increase the running costs of a company, besides the initial purchases of hardware and software. (2)
7.1.2 Outline TWO practical ways in which ICT could save a company money. (2)
- 7.2 These days, many people suffer from 'information overload'.
Give TWO strategies that can help prevent information overload. (2)
- 7.3 The main speaker at an ICT careers evening at the school used the word 'telecommuting' several times.
7.3.1 Briefly explain the meaning of the term *telecommuting*, as it applies to today's job market. (1)
7.3.2 Give ONE benefit of telecommuting. (1)
- 7.4 Give a brief definition of the term *social engineering*, in the context of computer crime. (2)

[10]

Question 8: Solution Development

8.1 Describe what each of the following word processing functions 'does' or is used for:

- 8.1.1 Widow/Orphan control (1)
- 8.1.2 Footnote (1)
- 8.1.3 Soft enter (1)

8.2 Examine the following screenshot of part of a paragraph in a *Word* document:

On the Insert tab, the galleries include several very useful items that are specifically created and designed to coordinate with the overall look of your document. When you engage with objects and diagrams you can use these galleries to insert tables, headers

- 8.2.1 Name the type of indent that was used on the left side of the paragraph. (1)
- 8.2.2 Identify any ONE formatting feature that could be changed in order to make the paragraph more readable, besides any alignment or justification options. (1)

8.3 Study the following extract of an employer's *Excel* worksheet, which was designed to calculate the number of hours worked by certain members of staff:

	A	B	C	D
	Name	Time From	Time To	Hours Worked
1				
2	James P	08:00	12:00	00:00
3	Mogwadi F.	08:30	12:15	18:00
4	Van Blerk J.	08:15	13:00	18:00
5	Swanepoel H.	09:00	11:30	12:00

- 8.3.1 The correct formula was used in column D to work out the number of hours worked, but the result is not being displayed correctly.
Explain what needs to be done to correctly display the number of hours worked. (Note that, in your answer, it is NOT necessary to describe the menu options or actual mouse clicks required.) (1)
- 8.3.2 The extract shown above is part of a much longer worksheet. When the user scrolls down the list of names, the headings in row 1 eventually 'disappear' off the top of the worksheet.
Give the name of the spreadsheet feature that can be used to prevent the heading row/s from scrolling out of view. (1)

- 8.3.3 In making a hardcopy of the worksheet, the employer decided to use the following option, which appeared in a dialog box:



Briefly explain why the employer decided to use the option 'Rows to repeat at top' in making the hardcopy. (1)

- 8.4 The following field names were used in a database table to store the records of pupils in a certain school:

Surname
Date_Of_Birth
Age
Grade_Team

- 8.4.1 Explain why none of the existing fields would be suitable as a primary key for this table, by giving the essential requirement of a primary key. (1)

- 8.4.2 Explain why it was unnecessary to include *Age* as a field in this table. (1)

- 8.4.3 *Surname* is a text field with a default field size of 255, which is too large, and should be reduced.

Explain why one generally needs to be careful when reducing the size of a text field in a database table. (1)

- 8.4.4 The field *Grade_Team* is being used to store both the grade and the team of a pupil.

Explain why it is not a good idea to store two separate pieces of information together in the same field in a database table. (1)

- 8.5 Examine this piece of HTML code, which is used to place the image *building.jpg* on a web page:

```
<img alt = "New school building" src = "building.jpg" width = "100" height = "75" >
```

- 8.5.1 Give two reasons for including the width and height attributes in the image tag. (2)

- 8.5.2 Give the unit in which the width and the height attributes are specified. (1)

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SECTION C

Scenario:

The school has decided to start a school newspaper. The newspaper will be edited in the Senior Computer Workroom, which is equipped with three networked computers and a scanner. The Grade 12 CAT class has been asked to inspect the current hardware and software setup and to generally help with the project.

Question 9: Integrated Scenario

- 9.1 One additional desktop computer will be needed in the workroom. Study the following advertisement from a local computer shop and answer the questions that follow:

PC BOX ONLY

Midi Tower Case
Intel Pentium Dual Core 2.6 GHz
Gigabyte motherboard
4 GB DDR RAM
500 GB Hard Drive
DVD Super Multi Writer

BEST BUY!

- 9.1.1 The above advertisement represents an *entry-level* computer.
Give ONE advantage and ONE disadvantage of buying an entry-level computer.
Distinguish clearly between the advantage and the disadvantage in your answer. (2)
- 9.1.2 Assume that the school has decided to buy the computer as advertised.
Name an output device that would still be needed for this computer before the computer could be used, and that does NOT appear in the list of advertised items. (1)
- 9.1.3 Identify one item in the advertisement that could be regarded as optional, i.e. not strictly needed for the day-to-day functioning of the computer.
Motivate your answer. (2)
- 9.2 Ross, the most knowledgeable pupil in the CAT group, has set up the new computer and installed an operating system, and anti-malware software. What is the most probable reasoning behind each of the following?
- 9.2.1 Why Ross did not need to install a separate NIC (network interface card) in this computer to connect the computer to the network. (1)
- 9.2.2 Why Ross decided not to backup the operating system after installing it. (1)
- 9.2.3 Why Ross set the *disk defragmenter* utility to run after normal school hours. (1)
- 9.2.4 Why Ross decided to install the Windows 7 *service pack* rather than a *patch*, to fix a specific 'bug' in the software. (1)

- 9.3 A printer needs to be purchased to make proof copies of the newspaper for the printing company and the principal.
- 9.3.1 Give ONE advantage and ONE disadvantage of using an inkjet printer for this purpose.
Distinguish clearly between the advantage and the disadvantage in your answer. (2)
- 9.3.2 What would be the main advantage of buying a printer that has a WiFi receiver built into it? (1)
- 9.4 Fayeez, a group member, has come up with an exciting idea: publish the newspaper (or parts of it) online as well as on paper! He has heard that a blog can even be published through *Word*.
- 9.4.1 Give TWO advantages that an online version of the newspaper would have for its readers, over the traditional hardcopy version. (2)
- 9.4.2 Briefly describe how Fayeez can set up his browser so that the newspaper site loads automatically when he opens the browser. (1)
- 9.4.3 Fayeez has decided to use WordPress as their blog provider, as it supports *Word*.
Inform Fayeez of the TWO typical pieces of information that he will need to provide when creating any secure blog account (not only using WordPress), besides the URL of the blog. (2)
- 9.4.4 Fayeez has subscribed to a number of other blogs and news websites, but he feels frustrated, because he has to check each site individually for updated content.
Suggest a way to automate this time-consuming task. (1)
- 9.4.5 Online viewers of the newspaper might need to install a *plug-in* for their browsers.
Explain why browser plug-ins might be required. (1)
- 9.5 Danie has been put in charge of maintaining the computers.
- 9.5.1 He noticed that one of the computers was working more slowly than usual, especially when multitasking, i.e. processing multiple tasks simultaneously.
Defragmenting the hard drive did not solve the problem.
Give TWO general ways in which a 'sluggish' computer could be made to work faster, besides defragmenting the hard drive. (2)
- 9.5.2 An unused UPS was found in the computer storeroom, which Danie intends to install on the workroom server.
Briefly explain the benefit of having a UPS attached to a computer. (1)
- 9.5.3 It has been decided to buy an additional hard drive for extra storage space.
Give TWO reasons why it might be better to buy an external hard drive, rather than an internal hard drive. (2)
- 9.5.4 All the hardware items on the computer inventory have been *barcoded*.
Give Danie ONE benefit of using a barcoding system, apart from the fact that scanning barcodes is much faster than manually entering the codes. (1)

9.6 Archiving (i.e. permanently storing) previous editions of the paper will eventually need several gigabytes of space. Fayeez hears that *Google Drive* is a good storage solution. Briefly explain:

9.6.1 Why a USB port is not needed to use Google Drive. (1)

9.6.2 Why Google Drive might NOT be the best storage solution for them, in terms of its intended use (archiving previous editions). (1)

9.7 The group has started using the computers and putting together the first edition of the newspaper. They need your advice on various 'problems' that have arisen.

9.7.1 The screenshot below shows the printers installed on one of the computers.

Briefly explain what needs to be done to enable a user to print to the HP Officejet printer automatically, i.e. without having to select this printer manually from a drop-down list. (1)



9.7.2 Paul wanted to print the latest newspaper for proofreading. But right after he pressed 'print', he realised that he had forgotten to change the printer setting to draft mode. The printer had not yet started to print. He then switched the printer off to prevent it from printing.

Explain to him what he should rather have done to cancel the printing, by referring to the concepts of a printer *queue* and *spooling*. (2)

9.7.3 The printer has now run out of ink. Paul removed the empty cartridge and tossed it into the rubbish bin.

Explain *why* he should rather have sent the cartridge back to the manufacturer, or should have considered refilling it, besides any cost implications. (1)

9.7.4 Ross wants to send a single e-mail both to Joey and to his English teacher, to report on Joey's poor spelling. However, Ross does not wish Joey to know that the same e-mail was also sent to his English teacher.

Describe how Ross should set up the addressing section of the e-mail for each of the two recipients. (2)

9.7.5 The group needs to keep in touch with their sponsors in the community, but unfortunately the e-mail addresses and cell phone numbers of these sponsors are not all available.

Suggest ONE other way in which they could keep in contact electronically. (1)

9.7.6 In one of her articles, Siby used the words 'ubiquitous' and 'redolent'. However, these are not common words and will not be understood by most readers.

What feature of a word processor could Siby use to find simpler versions of these words, i.e. in more 'understandable' English? (1)

9.7.7 Danie is upset to discover that his anti-virus package is still 'letting through' phishing e-mails.

Briefly describe the different roles that e-mail plays in:

- the spreading of computer viruses, and
- phishing attacks.

(2)

9.8 Ross wishes to send a collection of jpg files to a friend. However, the files are too large to be included as e-mail attachments.

9.8.1 Suggest a reason why, in this specific case, file compression might NOT help to reduce the files to an acceptable size for an e-mail attachment.

(1)

9.8.2 Give ONE other way in which the files could be sent electronically, without having to reduce their size.

(1)

9.9 During the installation of a new software package, Ross was asked to accept the terms of the EULA (End User Licence Agreement).

9.9.1 Explain in your own words what a EULA is.

(1)

9.9.2 Explain the difference between a *single user* licence and a *site* licence.

(2)

9.10 An annoying window, advertising a trip to Mauritius, kept appearing on the screen while Sam was doing research on the Web.

9.10.1 Give the general name for this type of window that appears automatically, and without your permission, when you are viewing a website.

(1)

9.10.2 Briefly describe the best way for Sam to prevent these unwanted windows from appearing on her screen in the future.

(1)

9.11 The CAT teacher wishes to include an informative *Did You Know?* article on some interesting ICT facts, and has approached the group for their input on the following:

9.11.1 The diagram below shows the QR ('Quick Response') code for the URL of the Wikipedia Mobile home page (<http://en.m.wikipedia.org>):



Give the main advantage of a QR code over a conventional barcode, and state what kind of input device would typically be used to 'read' a QR code.

(2)

9.11.2 Even Google has started displaying the closed padlock icon in the address bar of browsers, as shown in the following screenshot:



Explain the significance of the 'closed padlock' icon in a web browser.

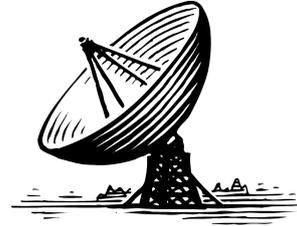
(1)

9.11.3 “There are over 10 million iPads in the education system, with 300+ South African schools having rolled out iPads in their classrooms.”

Source: <http://www.iparent.co.za>

- Name the *type* of computer represented by the popular iPad range.
- Give one benefit of using iPads in the classroom over traditional desktop computers in a dedicated ‘computer room’, besides any cost implications. (2)

9.11.4 Exciting news! The SETI@home project allows YOU to participate in the Search for Extra-Terrestrial Intelligence (i.e. life on other planets), using *grid computing*.



Briefly explain the main concept of ‘grid computing’.

(1)

[50]

TOTAL: 150