

# **Study Opportunities**

**June 2014**

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## **COMPUTER APPLICATIONS TECHNOLOGY**

**Grade 12**

**Paper 2 – Written**

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*TIME: 3 HOURS*

*MARKS: 150*

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This question paper consists of 14 pages (cover page included)

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## Instructions and information

1. The 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 2 mark question 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.
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## 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 groups of computer systems is arranged in ascending order of processing power, i.e. from least powerful to most powerful?
- A. ultrabook, netbook, workstation
  - B. netbook, ultrabook, workstation
  - C. ultrabook, workstation, netbook
  - D. workstation, netbook, ultrabook (1)
- 1.2 Which one of the following types of malware refers to the forging of an e-mail header, so that the e-mail appears to originate from a different source?
- A. Spoofing
  - B. Cracking
  - C. Pharming
  - D. Phishing (1)
- 1.3 Which one of the following statements about the gathering and processing of information for electronic manipulation is INCORRECT?
- A. A questionnaire works best if it contains 'closed' questions.
  - B. The Insert tab can be used to add form fields in a *Word* document.
  - C. A drop-down form field is used to select a single item from a list.
  - D. A text file can be used as a data source for a mail merge in *Word*. (1)
- 1.4 The term 'caching' refers to . . .
- A. methods for improving the overall performance of a computer.
  - B. the process of checking a drive for errors and fixing them.
  - C. a way of making more hard drive space available.
  - D. background scanning a computer system for viruses. (1)

- 1.5 Which one of the following file types is associated with both audio and video content?  
A. wav  
B. mp3  
C. mpeg  
D. rtf (1)
- 1.6 The most effective way to improve the overall performance of an older computer is to . . .  
A. defragment the hard drive regularly.  
B. uninstall seldom used programs.  
C. upgrade to an LED monitor with a faster response time.  
D. add more RAM. (1)
- 1.7 Which one of the following best describes the term *metadata*?  
A. Online information about a file  
B. Additional properties or information about a file  
C. An object in an *Access* database  
D. Raw data that has not yet been processed (1)
- 1.8 The least effective way to share a large executable file (.EXE extension) securely with a number of people is to . . .  
A. make the file downloadable via a link on a password protected web page.  
B. attach the file to an e-mail message.  
C. upload the file to an FTP server.  
D. use the services of Google Drive. (1)
- 1.9 The specification 802.11b/g/n in an advertisement for a computer means that the computer . . .  
A. has a Thunderbolt port for high speed data transfer.  
B. can be connected to a cabled network.  
C. is fitted with a Solid State Drive.  
D. has built-in support for WiFi. (1)
- 1.10 Which one of the following statements best describes the term *Beta software*?  
A. Software that is out of date  
B. Software that is still being tested  
C. Software released for sale to the general public  
D. Software known to contain malware (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 you also need to rewrite the statement by **ONLY** changing the key term (underlined) in order 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 - A printer is an example of **hardware**.

- 2.1 The Excel function LEN can be used to find the length of a character string.
- 2.2 PDF software is used to convert scanned images of text into text that can be edited in a word processor.
- 2.3 A shaped Internet connection means that all the Internet services are given the same priority.

[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 Storage device that contains no moving parts	A. CAD
3.2 Technology used to transfer information in small 'tags' wirelessly	B. HDD
3.3 Type of user interface associated with the use of input gestures	C. ISO
3.4 Category of application software used by architects and engineers	D. SSD
3.5 The rating, or measure, of a digital camera's sensitivity to light	E. LTE
3.6 Protocol for sending files over an Internet connection	F. MICR
3.7 Health condition associated with the improper or frequent use of input devices	G. GIGO
3.8 A type of cyber-attack, in which a server is rendered inaccessible	H. RFID
3.9 Term associated with the colour abilities of printers	I. WWW
3.10 Another name for the latest 4G cellular technology	J. CMYK
	K. GPS
	L. GUI
	M. CTS
	N. DPI
	O. FTP
	P. DDoS

[10]

## SECTION B

### Question 4 : Systems Technologies

- 4.1 The keyboard and mouse remain the most commonly used input devices, but they do have certain limitations when compared with other input devices such as *touch screens*.
- 4.1.1 Give TWO benefits or advantages for users in terms of using touch screens as opposed to using a keyboard and mouse. (2)
- 4.1.2 Give TWO possible troubleshooting steps you could take if your wireless keyboard were to stop responding. (2)
- 4.2 Businesses generally need printers to generate invoices for POS (point-of-sale) transactions, sometimes even multiple copies of the same transaction to help security at exit points and with stock control, etc.
- 4.2.1 Give ONE reason why an inkjet printer would not be suited for the above purposes. (1)
- 4.2.2 Suggest a more suitable type of printer for this purpose. (1)
- 4.3 A quick investigation reveals that your hard drive is nearly 100% full, and that your computer is responding much more slowly than usual.  
Explain why defragmenting the drive will not solve this problem, by referring to what happens in the defragmentation process. (2)
- 4.4 Consider the specifications for a typical computer shown below and answer the questions that follow:

15.6" LED HD (1366 x 768) Display Intel Core i3 2.3 MHz 4 GB DDR3 RAM 1 TB Hard Drive DVD Super Multi Writer Intel HD Shared Graphics LAN and Wireless LAN Bluetooth Touchpad VGA and HDMI out MS Windows 7 Professional 32bit
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- 4.4.1 Give the general name of the specification or aspect of the screen to which the measurement 1366 x 768 refers. (1)
- 4.4.2 This computer has 2500 times more secondary memory (storage) than primary memory (RAM).  
Briefly explain why it is necessary to have so much more secondary memory or *storage* compared to primary or main *memory*, by referring to their functions. (2)
- 4.4.3 Both the wired LAN and Bluetooth can be used to transfer files over a network. Give ONE advantage of using the LAN to transfer files, as opposed to using Bluetooth. (1)

- 4.4.4 Could this computer be used to play a movie on Blu-ray? Motivate your answer. (1)
- 4.4.5 Explain what the specifications *VGA and HDMI out* refer to, i.e. their significance, not what the abbreviations mean. (1)
- 4.4.6 Give TWO reasons that would suggest that the computer being advertised is a portable computer such as laptop. (2)
- 4.4.7 One of the specifications listed for this computer is obviously wrong. Name the hardware component in the advert with the incorrect specification and write down a more appropriate specification for this component. (2)
- 4.5 It is important to consider *compatibility* issues and *system requirements* before investing in new software.
- 4.5.1 Give TWO typical hardware requirements for installing the software, besides the DVD drive. (2)
- 4.5.2 Give ONE reason why the hardware requirements would be less of an issue if the software were *cloud-based*, e.g. Google Docs. (1)
- 4.5.3 Assume that you have installed the latest version of an office suite. Describe why *downward compatibility* would be an advantage in using this software. (1)
- 4.6 Most new software that is written will usually have 'bugs' in it. Two common ways of fixing software bugs are to use *patches* and *service packs*.
- 4.6.1 What is a software 'bug'? (1)
- 4.6.2 Briefly explain the differences between a patch and a service pack, by describing the essential features of each one. (2)

**[25]**

### **Question 5: Internet and Network Technologies**

- 5.1 There are a number of options to consider when choosing a broadband Internet package.
- 5.1.1 Explain what is meant by the term *broadband* in terms of a broadband Internet package. (1)
- 5.1.2 Give the main reason for setting up WiFi at home, and also give ONE potential danger of setting up and using WiFi. (2)
- 5.1.3 Name one additional device or hardware component that you might need to set up WiFi at home, besides the computers themselves. (1)
- 5.1.4 The connection speed of an ADSL package is advertised as 1024 Kbps/512 Kbps. Explain the significance of the two different speeds. (2)
- 5.1.5 ISPs offer data bundles which are generally associated with a given 'cap'. Explain what is meant by the term *cap*, and explain why uncapped packages are more expensive than capped ones. (2)
- 5.2 Describe TWO potential disadvantages or limitations of using a mobile connection to connect to the Internet. (2)

- 5.3 One advantage of online storage systems is their ability to *synchronise* your files. (1)
- 5.3.1 Give ONE example of an online storage service, other than Google Drive. (1)
- 5.3.2 Explain what is meant by 'syncing' your files. (1)
- 5.3.3 When it comes to file sharing, online storage has several advantages over e-mail attachments. Give ONE of these advantages. (1)
- 5.4 Laptops generally include a built-in *webcam*. (2)
- Give TWO situations where a built-in webcam could come in handy or be used. (2)
- [15]**

### Question 6: Information Management

- 6.1 Gathering data that is already in digital format has several advantages. Briefly discuss TWO of these advantages, other than the fact that such data can easily be downloaded from the Internet. (2)
- 6.2 Questionnaires are often used to obtain information from people. (1)
- 6.2.1 With so much information that is already available on the Internet and in books, explain why questionnaires are still so widely used. (1)
- 6.2.2 Give TWO guidelines that can be used to ensure that a questionnaire will have an effective layout and be easy to complete. (2)
- 6.3 Surveys and questionnaires can be conducted (done) in many ways such as posting them to respondents, phoning respondents or asking them to respond online. (2)
- 6.3.1 Briefly describe TWO benefits of conducting a survey via the Internet from the point of view of the organisation conducting the survey (not the people completing the survey). (2)
- 6.3.2 Mention ONE possible drawback or disadvantage of conducting a survey via the Internet from the point of view of the people completing the survey, besides the need for Internet access. (1)
- 6.4 Data requested in a survey is often 'asked' and stored as numerical codes. For example Matric learners may have to enter their subjects as codes – where 747 might represent CAT and 845 might represent Mathematics, etc. (2)
- Give TWO reasons why you think this might be the case. (2)
- [10]**

## Question 7 : Social Implications

- 7.1 A popular service that runs on the Internet is Instant Messaging (IM).
- 7.1.1 Explain why IM communication is less likely to be used for criminal activities, such as cyber-bullying and identity theft, than more general online chat facilities. (1)
  - 7.1.2 Describe one other disadvantage associated with all real-time messaging systems, other than the risk of criminal activities such as those listed in Question 7.1.1 above. (1)
  - 7.1.3 Give ONE example of a popular IM application. (1)
- 7.2 One often sees advertisements for *anti-virus* software (e.g. Norton, Kaspersky, AVG), but one hardly ever finds an advertisement for *firewall* software.
- Describe the difference in functioning between anti-virus software and firewall software that would account for this difference in advertising or marketing. (2)
- 7.3 Accessing a number of people's computers *remotely* to use their processing time and power can be regarded either as a positive exercise or as a criminal activity.
- Discuss the above statement, by giving ONE beneficial or constructive example of this type of usage, and ONE example of using it for criminal purposes.
- Also give the correct technical terms used to describe or categorise each of these activities in general. (4)
- 7.4 Many companies ban or restrict the use of flash drives.
- Motivate why they sometimes do this by referring to a practical reason they might have, besides the risk of spreading malware such as viruses. (1)

**[10]**



## Question 8: Solution development

8.1 Examine the following extract of a spreadsheet and answer the questions that follow:

	A	B	C	D	E	F
1	<b>Name</b>	<b>Surname</b>	<b>Mark 1</b>	<b>Mark 2</b>	<b>Final results</b>	
2			<b>60</b>	<b>60</b>	<b>120</b>	<b>Percent</b>
3						
4	Paige	Anderson	45	32	77	64
5	Christiaan	Barnard	48	53	101	
6	Farezana	Coopasamy	54	52	106	
7	Lebogang	Craill	38	48	86	
8	Cassandra	Dauids	36	41	77	

8.1.1 Give TWO aspects about this spreadsheet that would need to be changed before it could be used as a data source for a mail merge. (2)

8.1.2 The formula = **E4 / E2 \* 100** was used in cell F4 to calculate the percentage for Paige Anderson. It gives the correct answer.

However, the formula would not work if it were copied as it is to cells **F5:F8**.

Explain why it would not work and briefly explain how to correct this problem. (2)

8.2 A teacher prepares pupils' exam marks in a spreadsheet. The symbols A, B, C, D, etc., corresponding to the marks in column B, must be displayed in column C.

A	B	C
<b>Name</b>	<b>Percentage</b>	<b>Symbol</b>
Adams, John	65	
Baloyi, Maite	73	
Crowe, Peter	91	

8.2.1 Give the name of a spreadsheet function that could be used in column C to display these corresponding symbols. (1)

8.2.2 Which spreadsheet feature could be used to allow one to see at a glance which marks represented a distinction? (1)

8.2.3 Explain why it is NOT a good idea to store the name and surname of the pupils in one column, as is currently the case. (1)

8.3 A friend returns a copy of your History essay, typed in *Word* with track changes in it.

Briefly describe the Track Changes feature in *Word*, and give ONE benefit of using this in a situation such as the one outlined above. (2)

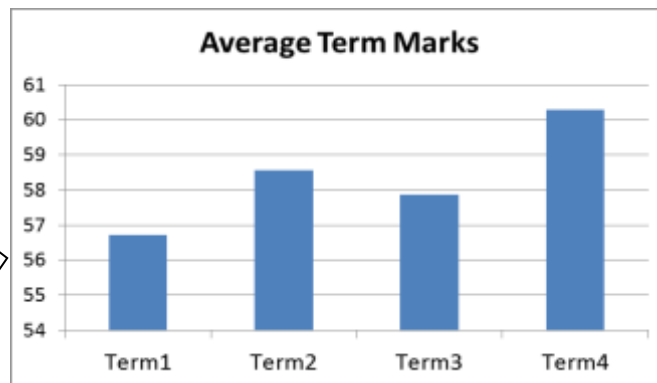
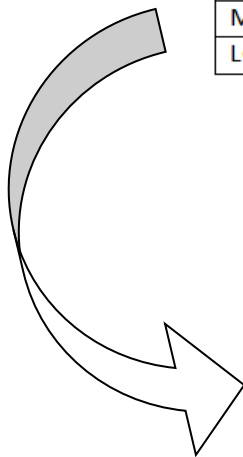
8.4 Describe in general terms, without giving the actual mouse clicks required, how you would set up the following navigation in a long *Word* document:

When you click on the word Pinterest near the top of the document, you must 'jump' to the explanation of this word in the Glossary at the end of the document. (2)

8.5 Assume that you have been given the marks for a pupil for all of their subjects across the four terms of the year in a *Word* table as shown below.

You have been asked to make a graph of the learner's average mark for all the subjects for each term. This graph must eventually appear in a *Word* document.

Subject	Term1	Term2	Term3	Term4
English	62	64	58	60
Afrikaans	60	55	62	63
Mathematics	55	57	56	58
Science	65	62	62	64
History	52	55	52	60
Music	45	52	55	56
LO	58	65	60	61



Write down the main steps you would need to follow to do this. You do NOT need to (and must not) refer to specific toolbars or commands that you need to use or 'click' on.

(4)

[15]

## SECTION C

### Scenario:

As part of your school's decision to pursue a reptile awareness campaign, the Grade 12 CAT class has been tasked to organise an electronic information desk in one of the classrooms, during the school's annual Open Day event. Three networked computers will be used. The programme includes demonstrations of video editing and animation projects that the CAT pupils have been developing.

### Question 9: Integrated Scenario

- 9.1 Explain, with reference to the scenario, why *entry-level computers* may NOT be suitable for the information desk to use. (2)
- 9.2 One CAT pupil suggested that she brings along her *Kindle e-reading* device, to show visitors the latest wildlife books available on Amazon.  
Describe TWO possible advantages of using an e-reader in this situation, over using a laptop or desktop computer. (2)
- 9.3 There were some problems in setting up the school's high quality data projector for a *PowerPoint* slideshow. Consider the following problems, and write down ONE possible solution for each:
- 9.3.1 The image displayed on the screen was too dim to be seen properly, even though the room was sufficiently darkened. (1)
- 9.3.2 There was no sound from the speakers, even though they were switched on and plugged into the correct jack. (1)
- 9.4 The class would like to take photographs of visitors posing with one of the school's collection of harmless snakes, and provide them with hardcopy printouts.
- 9.4.1 Give TWO ways in which photographs taken by a digital camera could be transferred to a laptop, other than by making use of Bluetooth. (2)
- 9.4.2 Describe one *advantage* and one *disadvantage* of using an inkjet printer for producing the hardcopies of the photographs. (2)
- 9.4.3 Give the group TWO tips on how they could practise green computing, with reference to their use of the printer *in this scenario*. (2)
- 9.5 Good Internet connectivity is an important requirement for the information desk.
- 9.5.1 The school has an ADSL connection hosted by their ISP.  
Give ONE additional service offered by an ISP, other than the fact that an ISP provides Internet access to its clients for a monthly fee. (1)
- 9.5.2 Give TWO advantages of an ADSL connection. (2)

- 9.6 It was suggested that *Google Maps* be used to give prospective visitors directions on how to get to the school. The CAT teacher cautioned that Google Maps might not be the best way to advertise the directions, especially for people that were negatively affected by the *digital divide*.
- 9.6.1 Explain the CAT teacher's reasoning, by explaining the term *digital divide*. (2)
- 9.6.2 Another way to give visitors directions to the school would be to get visitors to use the 'direction-finding' technology already built into their Smartphones.  
Give the general name of this 'direction-finding' technology. (1)
- 9.6.3 Using a Smartphone to get directions is an example of *convergence*.  
Explain what the term convergence means in the context of technology. (1)
- 9.7 The group would like to promote a CBT (Computer Based Training) software package on snake identification. The package is also available as an *app* that runs on the *Android platform*.
- 9.7.1 Give TWO advantages of using a CBT package, over more traditional training methods. (2)
- 9.7.2 Explain what the term *Android platform* refers to or means. (1)
- 9.7.3 Give an example of a *type* of computing device on which the above *app* may be used. (1)
- 9.8 Some software problems arose when a group member tried to use some software that he brought to the school on a CD.
- 9.8.1 On one occasion he used the *Ctrl+Alt+Delete* keystroke combination to try to fix a problem.  
Describe what sort of problem, generally speaking, is solved by this means. (1)
- 9.8.2 The group member tried to edit a document that was stored on the CD.  
Explain why he could not use the 'quick-save' shortcut (Ctrl+S) to save his work, and suggest what he could have done to save a copy of the document. (2)
- 9.9 The group is excited at the prospect of testing out their new webcam, using *VoIP*.
- 9.9.1 Explain what VoIP allows one to do. (1)
- 9.9.2 Give an example of a popular software package that uses VoIP. (1)
- 9.9.3 Name ONE additional hardware component or device that you might need to make use of VoIP, besides the webcam and a computer. (1)
- 9.9.4 The Bursar, who manages the school's budget, is not too happy with the arrangement. She is worried that it will 'cost too much'.  
Explain in ICT terms the most likely reason for the Bursar's concern. (1)

- 9.10 While Luvuyo was copying some files from his flash drive, a virus alert pop-up, stating that a *Trojan* file with the name 'LoveLetter.exe' had been detected on his flash drive. Luvuyo was tempted to examine further the contents of this file.
- 9.10.1 Explain to Luvuyo why this was not a good idea, by explaining what a *Trojan* is in this context. (2)
- 9.10.2 Luvuyo was given an option to *quarantine* the file.  
Briefly explain what 'quarantine' means in this context. (1)
- 9.11 The CAT teacher has urged the pupils not to become victims of *social engineering*. Describe what the CAT teacher meant by the term *social engineering*. (2)
- 9.12 The classroom being used for the information desk has been fitted with burglar alarms and security gates. However, the school could still be at serious risk of crime involving computers.  
Suggest TWO examples of how crime may still be committed by the use of these computers, excluding any activities that involved the use of flash drives. (2)
- 9.13 When checking her Gmail account on one of the school's computers, Samantha received an e-mail supposedly from FedEx courier service (see below). This is a typical example of an *e-mail hoax*.

Dear Valued Customer

FedEx: Redirection of your Package (**MasterCard ATM**) to your correct address. This email is coming to you as a reminder concerning your pending package that has been with us for a long time. As you already know that this is containing your pending **Master DEBIT CARD** Package in your name and in the amount of **£1,000,000.00 GBP it's Equivalent to (\$1,600,481.27 USD)**.. This email is to let you know that our delivery team has finally carried out delivery of your package. The package left THIEF RIVER FALLS, MN USA on Ship (P/U) date: Wed 31/07/2013 15:40 for VENEZUELA and since on the Mon 05/08/2013 it has been in HA NOI, HA VN, VENEZUELA awaiting custom clearance. Although it has been pick up by our FedEx Express agency in GRAND FORKS, ND VENEZUELA waiting for you to give us right HOME ADDRESS for final delivering to you.

Here is the: Federal Express Tracking Number: (571910825340) Kindly click <http://www.fedex.com/Tracking>

On the tracking page you will see that this package is going to a wrong address. This is because you have refused to give us your cooperation.

You are hereby advised to provide us with the below details so we can Immediately have it sent out to our deliverymen in HA NOI, HA VN, VENEZUELA.

Your Name (In Full):.....  
Your Delivery Address:.....  
Your Direct Mobile Number:.....

**AUTHORIZED PAYMENT**

- 9.13.1 What is the general purpose of an e-mail hoax? (1)
- 9.13.2 Give TWO general tips on how to protect yourself against e-mail hoaxes. (2)

- 9.14 For the computer activities that are being planned, it is important that people with disabilities should also be considered.  
Suggest an input device that could be used to help people who suffer from:
- 9.14.1 Poor eyesight (1)
- 9.14.2 Poor motor control (stiff joints, arthritis etc.) (1)
- 9.15 The CAT teacher would like to capture the data of a survey that visitors have been asked to complete.
- 9.15.1 A database table can be a little difficult to use, with all the rows of data displayed on the screen at once.  
Which object in a database can be used to display only one record at a time on the screen? (1)
- 9.15.2 Assume that the data will be captured by a person with very little computer experience.  
Give TWO field properties or features in a database table that could be used to ensure that the data captured is valid and accurate. (2)
- 9.15.3 The teacher said that he would like to convert an *Access* report to an RTF file.  
State which office application (or type of application software package) will be able to open and read the contents of an RTF file. (1)
- 9.15.4 The data must also be analysed. Give TWO reasons why a *spreadsheet* may be better suited than a *database* for this task. (2)
- 9.16 The group is putting together a small website to advertise the Open Day event. From your own experience of working with HTML code, give the reason for each of the following two tips:
- 9.16.1 Always *indent* the code, i.e. do not place all the HTML code against the left margin. (1)
- 9.16.2 Do not write all the code at once, before viewing the page in your web browser for the first time. (1)
- [50]**

**TOTAL: 150**