



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

EXEMPLAR 2014

MARKS: 150

TIME: 3 hours

This question paper consists of 15 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of:

SECTION A (25 marks)
SECTION B (75 marks)
SECTION C (50 marks)
2. Answer ALL the questions.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. Do NOT write in the right-hand margin.
6. Leave a line between each subquestion.
7. In general, a mark is allocated per fact. A 2-mark question would therefore require TWO facts, et cetera.
8. Write neatly and legibly.

SECTION A**QUESTION 1: MATCHING ITEMS**

Choose a term/concept from COLUMN B that matches a description in COLUMN A. Write only the letter (A–O) next to the question number (1.1–1.7) in the ANSWER BOOK, for example 1.8 P.

COLUMN A		COLUMN B	
1.1	An application that can filter, sort and group data	A	convergence
1.2	An online service or technology that makes it possible for people who share similar interests to communicate with each other regardless of distance or time	B	fingerprint reader
1.3	A website that allows people to add and edit content together with others	C	mail merge
1.4	The trend where a variety of technologies is integrated into one single device	D	pharming
1.5	A word processing function that allows a user to automatically produce multiple personalised documents from a single template and data source	E	social networks
1.6	The practice of rerouting users to bogus or unexpected websites when they enter a URL in their web browser	F	grid computing
1.7	Markers used to indicate elements and formatting on a web page	G	wiki
		H	tags
		I	database
		J	cloud computing
		K	bandwidth
		L	blog
		M	adware
		N	functions
		O	word processor

(7 x 1)

[7]

QUESTION 2: 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 number (2.1–2.10) in the ANSWER BOOK, for example 2.11 D.

- 2.1 Programs designed for use on smartphones and tablet computers are commonly known as ...
A scripts.
B drivers.
C file managers.
D apps. (1)
- 2.2 When files are stored 'in the cloud', they are stored on a ...
A remote server.
B portable device.
C Blu-ray disc.
D USB flash drive. (1)
- 2.3 The word 'asymmetric' in the abbreviation ADSL refers to the ...
A digital divide with regards to Internet access.
B line shaping due to excessive use.
C difference in download and upload speeds.
D cap (limit) being enforced. (1)
- 2.4 Files with the extensions *wav*, *aac* and *ogg* can be converted to a file type with the file extension ...
A txt.
B mp3.
C docx.
D dll. (1)
- 2.5 Which ONE of the following utilities is an example of accessibility software?
A Task Manager
B WordPad
C Magnifier
D System Restore (1)
- 2.6 Tricking a user into revealing confidential information, such as a password, is known as ...
A social engineering.
B crowdsourcing.
C data manipulation.
D pharming. (1)

- 2.7 Once all the responses to a survey have been collected and collated, the data is ready to be ...
- A presented.
 - B analysed.
 - C backed up.
 - D e-mailed.
- (1)
- 2.8 If you want to copy and paste only the result of a formula in a spreadsheet and not the formula itself, the paste option you should select is ...
- A paste link.
 - B paste formatting.
 - C paste values.
 - D transpose.
- (1)
- 2.9 To enable them to keep track of information on several thousand employees, a large organisation is likely to make use of a ...
- A wiki.
 - B spreadsheet.
 - C database.
 - D content aggregator.
- (1)
- 2.10 Using multiple computer systems as though they were one computer is known as ...
- A grid computing.
 - B cloud computing.
 - C virtual computing.
 - D scientific computing.
- (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 number (3.1–3.5) in the ANSWER BOOK. Correct the statement if it is FALSE. Change the underlined word(s) to make the statements TRUE. (You may not simply use the word 'NOT' to change the statement.)

Examples:

QUESTION:	ANSWER:
Computer program instructions are executed by the <u>CPU</u> .	True.
<u>Defragmentation</u> is characterised by unequal access to ICT by different groups of people.	False. The <u>digital divide</u> is characterised by unequal access to ICT by different groups of people.

- 3.1 A PSU is a device used to provide power to all the separate components within a computer.
- 3.2 Public hotspots allow users to connect to the Internet using 3G.
- 3.3 A query in a database application is created in order to give a user an easy way to enter a record into a table.
- 3.4 System requirements describe which hardware and software is needed for software to be installed and run.
- 3.5 The 'Print Screen' key on the keyboard takes a screenshot and sends it directly to the printer.

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

SECTION B**QUESTION 4: SYSTEMS TECHNOLOGIES**

The specifications below appeared in an advertisement for a notebook computer.

Study the specifications and answer the questions that follow.

- Operating System – Windows 8
- Processor – Intel 1000M Celeron 1.8 GHz
- Display – 15.6" (1366x768), 16:9
- Video Graphics – Integrated Intel HD Graphics 4000
- Memory – 4 GB DDR3, 1 600 MHz memory
- Hard Disk – 160 GB, 5400 rpm
- Optical Drive – Integrated DVD reader
- Sound – Integrated stereo speakers (2 x 1.5 W)
- Integrated Communications – 802.11n Wi-Fi, 10/100M LAN
- Camera – 8 MP webcam
- 1 x HDMI
- 1 x 12-in-1 card reader

- 4.1 What is the major difference between USB 2.0 and USB 3.0 with regards to data transfer? (1)
- 4.2 Some of the specifications above refer to being 'integrated'.
- 4.2.1 Briefly explain what is meant by the term *integrated*. (1)
- 4.2.2 State TWO possible disadvantages of having an integrated device such as a video adapter. (2)
- 4.3 Would the computer described above be suitable for a power user such as a video-editing professional? (1)
- Motivate your answer by giving TWO reasons to support your answer. (3)
- 4.4 Which port on the notebook computer allows the computer to be connected to a modern television set? (1)
- 4.5 Give TWO reasons why a notebook computer would be more suitable than a desktop computer for learners in a school. (2)

- 4.6 SSD is a recent addition to technology.
- 4.6.1 What is an SSD used for? (1)
- 4.6.2 State TWO benefits of an SSD when used in mobile devices. (2)
- 4.7 In order to use the Internet effectively for services such as video streaming and transferring large amounts of data, access to a broadband Internet connection is needed.
- 4.7.1 Which specification in the advertisement would allow for broadband connectivity? Motivate your answer. (2)
- 4.7.2 Give TWO reasons why some users might prefer a wireless broadband connection instead of a wired connection. (2)
- 4.8 Software is essential to the normal functioning of a computer.
- 4.8.1 Name the operating system that is packaged with the computer in the advertisement. (1)
- 4.8.2 State TWO functions of an operating system. (2)
- 4.8.3 Which category of software would users need over and above the operating system in order to use the computer for daily tasks? (1)
- 4.9 Any software will generally have minimum software and hardware requirements.
- Give TWO reasons why it would be better to invest in hardware that exceeds (is better than) these minimum requirements. (2)
- 4.10 Explain what *disk fragmentation* is by also explaining how this could slow down your computer. (2)
- [25]**

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

To the average computer user, a device could be considered useless if it were not connected to a network.

- 5.1 Give the generic name (abbreviation/acronym) for the type of network that spans a large geographical area. (1)
- 5.2 Briefly discuss the function of each of the following devices within a network:
- 5.2.1 NIC (1)
- 5.2.2 Switch (1)
- 5.3 Bluetooth is activated on two devices, but no data can be transferred between them.
Suggest a solution to this problem. (1)
- 5.4 Wi-Fi networks are targets for hackers.
Suggest ONE effective way of protecting a Wi-Fi network. (1)
- 5.5 Name a function or feature of a web browser that would allow a user to return to a specific website even if the browsing history has been deleted. (1)
- 5.6 Explain how software developers generate a profit from adware, even though it is distributed for free. (1)
- 5.7 State TWO advantages of podcasts over real-time streaming broadcasts. (2)
- 5.8 Web browsers use a technology called web caching.
- 5.8.1 What is *web caching*? (2)
- 5.8.2 State TWO possible advantages of using web caching. (2)
- 5.9 Describe TWO ways in which available bandwidth plays a role when watching videos online from services like YouTube. (2)
- [15]**

QUESTION 6: INFORMATION MANAGEMENT

We are exposed to so much information these days that we have to develop skills to ensure that we can analyse, process and report accurate information that is relevant to our needs.

- 6.1 What is the difference between *data* and *information*? (2)
- 6.2 Questionnaires are an effective way of sourcing data from a group of people.
- 6.2.1 State TWO benefits of using closed questions in a questionnaire. (2)
- 6.2.2 Which application software would be best suited to handling information from a questionnaire? Motivate your answer. (2)
- 6.3 Give TWO examples where you would use a database instead of a spreadsheet to process data. (2)
- 6.4 Briefly explain the concept of *plagiarism*. (2)
- [10]**

QUESTION 7: SOCIAL IMPLICATIONS

You believe that the responsible and educated use of technology promotes personal freedom and a healthy environment for economic growth.

- 7.1 Give ONE example of a common Internet scam. (1)
- 7.2 State ONE typical way in which your computer may be misused by cybercriminals if they use your computer as part of their botnet. (1)
- 7.3 State ONE way in which RSI can be prevented. (1)
- 7.4 Describe TWO potential negative effects that the use of social networks can have on people. (2)
- 7.5 Passwords are important for protecting users when accessing websites.
- State TWO strategies or techniques you can use to create or manage strong passwords. (2)
- 7.6 Name ONE legally acceptable use of a file-sharing application, such as BitTorrent. (1)
- 7.7 Give your opinion regarding the following statement by giving TWO reasons or examples to support your answer:
- 'The Internet offers its users some privacy.' (2)
- [10]**

QUESTION 8: SOLUTION DEVELOPMENT

8.1 You have discovered that HTML can be a stepping stone on your way to becoming a real programmer.

8.1.1 Rewrite the HTML code segment below to correct it.

`<h1>CAT<h1>` (1)

8.1.2 Identify the problem that will occur when the error-free code segment below is executed in a browser.

Suggest ONE way of fixing the problem.

```
<html>
  <body bgcolor="black">
    <h1>Hello World</h1>
  </body>
</html>
```

 (2)

8.2 Many modern businesses make use of databases.

8.2.1 Indicate in which section the function =Count(*) must be placed in a database report in order to count the number of records for each group of records in the report. (1)

8.2.2 Identify the type of database object in which you are likely to find the formula below.

Total:[Price][Quantity]* (1)

8.2.3 The database formula VAT:[Price*0.14] currently produces an error.

Correct the formula for it to work properly. (1)

8.2.4 State TWO differences between a *table* and a *query*. (2)

8.3 Mr Cele is sharing a document with his brother who is using an older version of the word processing application than the one that Mr Cele uses.

8.3.1 What must Mr Cele consider when saving documents, so that there are no formatting problems when it is accessed on his brother's computer? Motivate your answer. (2)

8.3.2 What is a *citation* in a document and when should it be used? (2)

8.4 Spreadsheets offer a variety of ways to organise and analyse data.

8.4.1 What is the difference in use between the spreadsheet functions *COUNTIF* and *COUNTA*? (2)

8.4.2 Write down the result of the function =ROUND(23.65,1). (1)

[15]

TOTAL SECTION B: 75

SECTION C**QUESTION 9: INTEGRATED SCENARIO****SCENARIO**

Your school has to elect a new School Representative Council. The principal would like to hold the election using computers and a program that will allow pictures of the candidates to be shown on the computers. This will not only save time (as the computers will automatically total the votes) but will also save on costs, such as paper. Mr Dawson, the principal of your school, has asked your CAT class to help organise and run the election process.

- 9.1 Mr Dawson has ordered 20 new computers to help with the election process. Answer the questions below he has regarding the computers he has ordered.
- 9.1.1 The computers all have integrated video adapters.
Give ONE possible advantage of this. (1)
- 9.1.2 The integrated video adapters use shared memory as opposed to dedicated memory.
Explain to Mr Dawson the difference between *shared memory* and *dedicated memory*. (2)
- 9.1.3 Election candidates will have their photos shown on the screens. Students can vote by clicking on the photos displayed on the screen.
Identify TWO possible advantages for voters during the election process if they were to use touch screens. (2)
- 9.2 Mr Dawson needs to take pictures of all the candidates to place on the computers.
- 9.2.1 Give TWO reasons why Mr Dawson should use a digital camera to take the pictures instead of a webcam. (2)
- 9.2.2 Mr Dawson needs to transfer the photographs he has taken from the digital camera to his computer.
State TWO ways in which he can accomplish this. (2)
- 9.2.3 The photographs from the digital camera take up a large amount of storage space, which means the memory card needs to be emptied regularly.
Outline TWO possible ways in which more photographs can be taken before Mr Dawson would need to empty the memory card. (2)
- 9.2.4 Give ONE example of information that Mr Dawson would be able to retrieve from the metadata in an image file. (1)

- 9.3 If the voting data is backed up, then the results and other reports can always be recreated.
- Mr Dawson needs to make sure that the voting data from the election is backed up properly.
- 9.3.1 What is a *backup*? (1)
- 9.3.2 Give TWO possible reasons why most people do not regularly make backups. (2)
- 9.3.3 State TWO advantages of using cloud storage instead of storage media such as CDs, DVDs and flash drives for backups. (2)
- 9.4 Staff will be able to vote from their wireless devices such as smartphones and tablets.
- 9.4.1 State TWO advantages of using an on-screen keyboard on a smartphone or a tablet instead of a traditional physical keyboard. (2)
- 9.4.2 One staff member has recently bought a phablet.
- What is a *phablet*? (1)
- 9.5 A local IT technician has provided Mr Dawson with a biometric security device that may be used during the voting process.
- 9.5.1 State ONE advantage of using biometric security to ensure that each learner can only vote once. (1)
- 9.5.2 In order to install the biometric security device, a driver is needed.
- What is a *driver*? (1)
- 9.5.3 Mr Dawson cannot find the original installation CD that contains the drivers needed to install the biometric device.
- Identify TWO possible sources other than the installation CD where he can try and find the necessary driver. (2)
- 9.6 Mr Dawson would like to make printouts of important documents before and after the election process.
- Recommend a type of printer for each of the scenarios below.
- NOTE:** Do NOT give brand names or specific models; just the TYPE of printer that would be best suited.
- 9.6.1 Printing high-quality colour pictures that will be put up in the school for learners to see who they can vote for. (1)
- 9.6.2 Printing a document that will contain the rules for the election process. The school will print 900 monochrome ('black-and-white') pages. (1)

- 9.7 Mr Dawson will be using his personal laptop to finalise the election results. Unfortunately, he sometimes has trouble with his laptop and printer. Explain to him how he can solve the following problems:
- 9.7.1 The laptop has slowed down considerably over the last year.
Give TWO possible reasons for this. (2)
- 9.7.2 One of the applications Mr Dawson is using has stopped responding to all input.
Outline the process he should follow to close the non-responding application. (2)
- 9.7.3 Mr Dawson has tried to print a document, but no printing occurred.
Give TWO possible reasons for this. (2)
- 9.8 Mr Dawson would like to publish the pictures and names of the election candidates in a blog.
- 9.8.1 Discuss TWO reasons that would make a blog the preferred solution for publishing the names and pictures. (2)
- 9.8.2 Parents want to keep up to date with regards to the election via the blog. However, some of the parents also have many other blogs they frequently read.
Outline a possible solution to their problem which would allow them to read new posts from all of the blogs without needing to visit each website separately. (1)
- 9.9 Some of the learners are on a sports tour in a different province. They will be casting their votes via the Internet.
Explain to Mr Dawson how a firewall would ensure the security of the network. (1)
- 9.10 Mr Dawson has approached an ISP for an uncapped, shaped Internet connection.
- 9.10.1 Distinguish between the terms *uncapped* and *shaped* with reference to an Internet connection. (2)
- 9.10.2 The ISP has warned Mr Dawson that high usage on the uncapped line will result in the line being throttled.
Explain to Mr Dawson what the term *throttling* means in this context. (1)

- 9.11 Mr Dawson needs to update two of the software packages on the computers in order for the election to proceed as planned.
- 9.11.1 Explain to Mr Dawson the difference between a *service pack* and a *patch*. (2)
- 9.11.2 State TWO possible ways in which Mr Dawson can acquire the service packs/patches needed to update the software. (2)
- 9.11.3 One of the applications has been discontinued and needs to be replaced. Mr Dawson has been advised to find and install a shareware version of the application.
- State TWO benefits of using shareware. (2)
- 9.12 Due to the fact that the network will be connected to the Internet, Mr Dawson is worried about security risks affecting the computers on the network.
- Describe to him what each of the following security risks are:
- 9.12.1 E-mail spoofing (1)
- 9.12.2 Identity theft (1)
- 9.12.3 Keylogger (1)
- 9.13 Mr Dawson needs to send an e-mail to each of the election candidates. He notices the option of adding an address in the Cc or Bcc field.
- Explain to him what the difference is between the *Cc field* and the *Bcc field*. (2)
- TOTAL SECTION C: 50**
GRAND TOTAL: 150