



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

COMPUTER APPLICATIONS TECHNOLOGY

EXAMINATION GUIDELINES

GRADE 12

2016

These guidelines consist of 13 pages.

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1. INTRODUCTION

The Curriculum and Assessment Policy Statement (CAPS) for Computer Applications Technology outlines the nature and purpose of the subject Computer Applications Technology. This guides the philosophy underlying the teaching and assessment of the subject in Grade 12.

The purpose of these Examination Guidelines is to:

- Provide clarity on the depth and scope of the content to be assessed in the Grade 12 National Senior Certificate Examination in Computer Applications Technology
- Assist teachers to adequately prepare learners for the examinations

This document deals with the final Grade 12 external examinations. It does not deal in any depth with the School-Based Assessment (SBA), Practical Assessment Tasks (PATs) or final external practical examinations, as these are clarified in a separate PAT document which is updated annually.

These Examination Guidelines should be read in conjunction with:

- The *National Curriculum Statement (NCS) Curriculum and Assessment Policy Statement (CAPS): Computer Applications Technology: Section 3 – Content and Scope per Topic and Section 4 – Assessment in Computer Applications Technology*
- The National Protocol of Assessment: *An addendum to the policy document, the National Senior Certificate: A qualification at Level 4 on the National Qualifications Framework (NQF), regarding the National Protocol for Assessment (Grades R–12)*
- The national policy pertaining to the programme and promotion requirements of the National Curriculum Statement, Grades R–12

Teachers must take note that these are only guidelines and changes and developments in the technological environment should be taken into consideration when topics are taught. Previous CAPS question papers should be used as preparation for the examinations.

2. NATURE OF ASSESSMENT IN PAPER 1

2.1 Cognitive levels

Each question in this question paper is evaluated in terms of its cognitive level and its level of difficulty.

LEVEL	TAXONOMY	DESCRIPTION
L1/C1	Routine procedures (Knowledge, remembering, recall)	Elementary procedures found in the application packages. These questions could include basic formatting, basic calculations, basic file actions and specific instructions such as inserting a table.
L2/C2	Multi-step procedures (Understanding, applying)	Extended tasks/actions/procedures. These questions could include the reproduction of documents, more complex instructions, longer calculations and multistep procedures such as performing a mail merge or creating database queries.
L3/C3	Problem-solving (Analysing, evaluating, creating)	These questions will comprise multi-step actions/strategies/procedures where candidates will be required to create their own solutions to challenges that may differ from those learners may have encountered in the classroom. These questions could include analysing documents, advanced file actions, advanced calculations and interpretation and decision making.

2.2 Levels of difficulty

Levels of difficulty are determined as follows:

- Easy for the average Grade 12 candidate to answer
- Moderately challenging for the average Grade 12 candidate to answer
- Difficult for the average Grade 12 candidate to answer
- Very difficult for the average Grade 12 candidate to answer. The skills and knowledge required to answer questions at this level allow for an A-grade candidate (extremely high achieving/high-ability learner) to be distinguished from other high ability/high-proficiency candidates.

In judging the degree of difficulty of each examination question, both the demands that each question makes on the cognitive schema of an average Grade 12 CAT learner and the intrinsic difficulty of the question or task are considered. In making this judgement the difficulty or ease of a particular question is identified. A four-category framework for thinking about question or item difficulty, adapted from Leong (2006), has been used in this identification process. This framework comprises the following four general categories of difficulty:

- Content (subject/concept) difficulty
- Stimulus (question) difficulty
- Task (process) difficulty
- Expected response difficulty

The estimated percentages for each level of difficulty within each cognitive level are shown in the table below.

	D1	D2	D3	D4	TOTAL
C1	±5%	±10%	±15%	-	±30%
C2	±10%	±20%	±8%	±2%	±40%
C3	±15%	±9%	±3%	±3%	±30%
TOTAL	±30%	±39%	±26%	±5%	100%

2.3 Content

Further clarification of content that could be tested in Paper 1 in the final examinations.

- Date and time functions as indicated on page 40 of the CAPS:
 - YEAR
 - MONTH
 - DAY
 - DAYS
 - DAYS360
 - HOUR
 - MINUTE
 - TIME
 - TODAY
 - NOW

- Forms, queries and reports as indicated on page 40 of the CAPS:
 - NO skills not listed in the CAPS will be tested using related tables.
- Use of electronic forms as indicated on page 31 and page 41 of the CAPS:
 - Legacy controls should be used to answer questions about electronic forms.
- HTML:
 - Refer to ANNEXURE A for the depth of questioning in HTML.
- Lookup and reference functions as indicated on page 50 of the CAPS:
 - LOOKUP
 - VLOOKUP
 - HLOOKUP
- Transfer of skills – skills learnt in one application may be tested in another application.
- Candidates may (but are not restricted to) use the SUMIFS and COUNTIFS functions to solve problems rather than using the existing functions to create complex functions. The SUMIFS and COUNTIFS may be used to answer questions.
- A combination of more than one function may be asked to solve complex problems.

2.4 Software

- As per Circular S9 of 2015, the DBE will use only Microsoft Office to implement and assess the curriculum.
 - Two versions of MS Office will be used, namely MS Office 2010 and MS Office 2013.
 - Should newer versions of MS Office be released, the phasing out of older versions and the implementation of newer versions will be communicated to all stakeholders by the DBE.
- Offline help files for Office 2013 can be downloaded from <http://www.microsoft.com/en-za/download/details.aspx?id=40326>.
- An HTML-editor such as Notepad++ MUST be used to answer the web development question in the question paper.
- ANY HTML QUESTION ANSWERED USING A WORD PROCESSOR WILL NOT BE MARKED.
- Refer to ANNEXURE G in *Government Gazette No. 31337 of 29 August 2008 – Regulations pertaining to the conduct, administration and management of assessment for the National Senior Certificate* – pertaining to the conduct of a practical computer-based examination and the security procedures that should be in place.

2.5 Scope

TOPIC	MARKS	CONTENT/FOCUS
Word processing	± 50	One or more main questions containing subquestions related to the content, concepts and skills in word processing
Spreadsheets	± 50	One or more main questions containing subquestions related to the content, concepts and skills in spreadsheets
Databases	± 40	One or more main questions containing subquestions related to the content, concepts and skills in databases
Web Development	± 20	One or more main questions containing subquestions related to the content, concepts and skills in web development An information sheet with HTML tags will be provided for use with the question on web development
General	± 20	Integration and application of techniques, knowledge and procedural skills
TOTAL	180 marks	

3. NATURE OF ASSESSMENT IN PAPER 2

3.1 Cognitive levels

Within each of the cognitive levels (L1, L2 and L3) there will be differences in the level of difficulty.

The percentages for each level of difficulty within each cognitive level are shown in the table below.

	D1	D2	D3	TOTAL
C1	5%	10%	15%	30%
C2	10%	20%	10%	40%
C3	15%	10%	5%	30%
TOTAL	30%	40%	30%	100%

3.2 Levels of difficulty

The cognitive levels used in Paper 2 are based on Bloom's Revised Taxonomy, as indicated below.

LEVEL	BLOOM'S REVISED TAXONOMY	DESCRIPTION
L1/C1	Remembering	Recalling previously learnt information (bookwork)
L2/C2	Understanding	Comprehending and explaining ideas or concepts
	Applying	Using what has been learnt and relating this to comparable situations
L3/C3	Analysing	Breaking information into parts to explore understandings and relationships
	Evaluating	Making judgements and justifying a decision or course of action
	Creating	Generating new ideas, solutions or ways of viewing concepts. Constructing new meaning out of diverse elements.

Within each of the cognitive levels (L1, L2 and L3) there will be differences in the level of difficulty. The percentages of each level of difficulty within each of the cognitive levels are shown in the table below.

	EASY	MODERATE	DIFFICULT	TOTAL
L1/C1	± 5%	± 10%	± 15%	30%
L2/C1	± 10%	± 20%	± 10%	40%
L3/C1	± 15%	± 10%	± 5%	30%
TOTAL	30%	40%	30%	100%

3.3 Scope

PAPER 2 – THEORY		MARK ALLOCATION	CONTENT/FOCUS
SECTION A			
Questions 1, 2 and 3	Short Questions	± 25	<p>This section will include all or some of the following:</p> <ul style="list-style-type: none"> • Multiple-choice questions covering all topics • Matching-item questions covering all topics • Modified True/False questions covering all topics
SECTION B			
Question 4	Systems Technologies	± 25	<p>Questions relating to the content, concepts and skills in the topic as listed in the CAPS document, including (but NOT limited to):</p> <ul style="list-style-type: none"> • Computer hardware in all its different forms and configurations • Peripheral devices, such as printers, routers, scanners, et cetera • System and application software • Network hardware and software • Housekeeping and management of computing devices • Basic troubleshooting, et cetera <p>Refer to pages 19–52 of the CAPS document for a detailed list of possible topics that may be tested in this section.</p>
Question 5	Internet and Network Technologies	± 15	<p>Questions relating to the content, concepts and skills in the topic as listed in the CAPS document, including (but NOT limited to):</p> <ul style="list-style-type: none"> • What is a network and why would one want to use a network? • Types of networks • The Internet, Internet services and the World Wide Web • Websites, web technologies and browsers • E-communications, including e-mail, instant messaging, et cetera <p>Refer to pages 19–52 of the CAPS document for a detailed list of possible topics that may be tested in this section.</p>

PAPER 2 – THEORY		MARK ALLOCATION	CONTENT/FOCUS
SECTION B (continued)			
Question 6	Information Management	± 10	<p>Questions relating to the content, concepts and skills in the topic as listed in the CAPS document, including (but NOT limited to):</p> <ul style="list-style-type: none"> • Formulation of key questions to locate data and direct problem solving • Choosing, locating and accessing appropriate data sources • Checking the quality and accuracy of data • Data processing • Interpretation of data and information, et cetera <p>Refer to pages 19–52 of the CAPS document for a detailed list of possible topics that may be tested in this section.</p>
Question 7	Social Implications	± 10	<p>Questions relating to the content, concepts and skills in the topic as listed in the CAPS document, including (but NOT limited to):</p> <ul style="list-style-type: none"> • The impact of ICT on society • Legal, ethical and security issues related to the use of ICT • Educational and ergonomic issues • Environmental issues, including green computing, et cetera <p>Refer to pages 19–52 of the CAPS document for a detailed list of possible topics that may be tested in this section.</p>
Question 8	Solution Development	± 15	<p>Questions focussing on the knowledge, understanding and development of solutions using application software. These questions will essentially revolve around the theoretical aspects of the applications studied.</p>
SECTION C			
Question 9	Integrated Scenario	± 50	<p>Candidates will be presented with a real-life scenario and questions covering all the topics will be asked. The questions will assess candidates' understanding of the technologies and their ability to make informed decisions (ranging from the choice of technology, application software to be used, networking, et cetera, to the responsible use of such technologies).</p>
TOTAL		150 marks	

NOTES:

- The content listed in the table above is not an exhaustive list of all the content – also refer to the CAPS document which contains a list of all possible content to be covered.
- Some of the topics may fall into two or more focus areas, so topics might be examined in different sections/questions from year to year, depending on examiner discretion.

3.4 New Technology/Terms

As per the CAPS document, new technology or terms relating to hardware and software may be assessed during each examination. The following list contains the new technology/terms that may be examined, as well as a short definition of each:

- **3D printing/printers:** 3D printers can create three-dimensional solid objects (for example motor vehicle parts, human tissue replacement, jewellery, clothing, et cetera) from a digital model of the item by adding successive layers of material on top of one another.
- **BYOD:** Bring Your Own Device refers to a concept where employees/students are allowed to bring and use their own portable devices such as smartphones, laptops, tablets, et cetera to work on and access the network instead of a device owned/supplied by the company/institution.
- **Click-jacking:** Users are tricked into clicking on an item on a webpage which acts as a concealed link.
- **Geotagging:** A process where the geographical position where a photograph was taken is added to the metadata of a file, for example adding the latitude and longitude.
- **LTE:** A standard used in wireless communication which provides for high-speed data transfer between cellular devices (such as smartphones and tablets) and ISPs. It is the next generation of cellular connectivity after 3G, sometimes also called 4G.
- **Micro USB:** A smaller version of a USB port, usually found on portable devices such as smartphones.
- **Multi-touch screen:** A feature of a screen that allows it to register more than one point being touched simultaneously.
- **Phablet:** A smaller version of a tablet which (over and above tablet features) also incorporates features found on a smartphone such as voice calls and SMSs.
- **URL shortening:** URL shortening is a tool or service used to convert a long URL to a shorter version. This shorter version of the URL will take a user to the same web address, but is easier to remember and/or type out.
- **802.11 a/b/g/n:** Refers to a set of specifications and protocols used in communication on a wireless network. The letters (a, b, g, n) indicate different versions of the Wi-Fi standard (each with different speeds, et cetera)
- **NFC:** Near Field Communication is a standard that allows devices such as smartphones to connect wirelessly, for example to exchange files, by touching them together or bringing them into close proximity.
- **Crowd funding:** A process where a single idea or business practice is funded by multiple small donations from volunteer contributors, usually before the business venture is started. The contributors will then receive the product when it is finally put into production. Examples include www.indiegogo.com and www.kickstarter.com.

3.5 Technology/Terms no longer to be examined

As technology improves many technologies may become obsolete or will no longer be relevant and will thus not be examined. In other cases the set differences between devices/technologies may become blurred. As a result, these concepts will not be examined in order to avoid confusion for the learners as well as markers.

Concepts/Technologies no longer to be assessed from 2016 and onwards include:

- Differences between laser and inkjet printers regarding printing quality and number of pages printed per cartridge.
- CRT monitors

ANNEXURE A: HTML TAG SHEET

Basic Tags	
Tag	Description
<body></body>	Defines the body of the web page
<body bgcolor="pink">	Sets the background colour of the web page
<body text="black">	Sets the colour of the body text
<head></head>	Contains information about the web page
<html></html>	Creates an HTML document – starts and ends a web page
<title></title>	Defines a title for the web page
 	Inserts a line break
<!-- -->	Comment
Text Tags	
Tag	Description
<h1></h1>	Creates the largest heading
<h6></h6>	Creates the smallest heading
	Creates bold text
<i></i>	Creates italic text
	Sets size of font, from "1" to "7"
	Sets font colour
	Sets font type
Links Tags	
Tag	Description
	Creates a hyperlink
	Creates an image link
	Creates a target location in the document
	Links to a target location created somewhere else in the document
Formatting Tags	
Tag	Description
<p></p>	Creates a new paragraph
<p align="left">	Aligns a paragraph to the "left" (default), can also be "right" or "center"
 	Inserts a line break
	Creates a numbered list
<ol type="A", "a", "I", "i", "1">	Defines the type of numbering used
	Creates a bulleted list
<ul type="disc", "square", "circle">	Defines the type of bullets used

Formatting Tags continued	
Tag	Description
	Inserted before each list item, and adds a number or symbol depending on the type of list selected
	Adds an image
	Aligns an image: can be "left", "right", "center", "bottom", "top", "middle"
	Sets the size of the border around an image
	Sets the height and width of an image
	Displays alternative text when the mouse hovers over the image or when the image is not found
<hr/>	Inserts a horizontal line
<hr size="3"/>	Sets size (height) of a line
<hr width="80%"/>	Sets the width of a line, in percentage or absolute value
<hr color="ff0000"/>	Sets the colour of the line
Table Tags	
Tag	Description
<table></table>	Creates a table
<tr></tr>	Creates a row in a table
<td></td>	Creates a cell in a table
<th></th>	Creates a table header (a cell with bold, centred text)
<table width="50">	Sets the width of the table
<table border="1">	Sets the width of the border around the table cells
<table cellpadding="1">	Sets the space between the table cells
<table cellspacing="1">	Sets the space between a cell border and its contents
<tr align="left">	Sets the alignment for cell(s) ("left", can also be "center" or "right")
<tr valign="top">	Sets the vertical alignment for cell(s) ("top", can also be "middle" or "bottom")
<td colspan="2">	Sets the number of columns a cell should span
<td rowspan="4">	Sets the number of rows a cell should span