COMPUTER APPLICATIONS TECHNOLOGY

EXAMINATION GUIDELINES

GRADE 12

2021

These guidelines consist of 17 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, which replace all earlier versions, is to:

- Assist teachers to adequately prepare learners for the examinations
- Provide clarity on the depth and scope of the content to be assessed in the Grade 12 National Senior Certificate (NSC) Examinations in Computer Applications Technology
- Elaborate on the contents of the Abridged Section 4 amendments of the CAPS
- Provide information on what will no longer be examinable
- Indicate what will be included in those topics that mention 'New Trends and Technologies'

This document deals with the final Grade 12 external examinations and not with the SBA or PAT per se. However, it is strongly suggested that the principles and the new content in these guidelines be applied to the SBA and PAT, where applicable.

These Examination Guidelines should be read in conjunction with:

- The *National Curriculum Statement (NCS) Curriculum and Assessment Policy Statement (CAPS):* Computer Applications Technology, specifically
  - Section 3 – Content and scope per topic
  - Section 4 – January 2021 Abridged Section 4 amendments of the NCS CAPS: Computer Applications Technology
- Annexure G: *Government Gazette No. 37651*, 16 May 2014 (formerly in *Government Gazette No. 31337* of 29 August 2008): Regulations pertaining to the conduct, administration and management of assessment for the National Senior Certificate.
- 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 guidelines. Changes and developments in the technological environment should be taken into consideration when topics are taught.

2. COGNITIVE DEMAND AND LEVELS OF DIFFICULTY

Each question in both the Practical and the Theory question papers is evaluated in terms of its cognitive demand and its level of difficulty.

2.1 Cognitive demand

LEVEL	TAXONOMY	DESCRIPTION
L1/C1	• Knowledge, Remembering • Routine procedures • Information gathering	Recall of factual/process knowledge **in isolation**, i.e. one step/set of basic steps/instruction/process at a time. For example, definitions in the theory section and simple procedures found in the application packages.
L2/C2	• Understanding, Applying • Multi-step procedures • Information processing/ Building understanding	Demonstrates **understanding** of steps/processes/isolatable bits, such as translating from one form of representation to another, e.g. translating pictures, symbols, diagrams, screenshots, 'words'/mathematical equations into, for example, spreadsheet formulas. These questions could include reproduction of aspects of documents. It also requires using **known routines/steps/processes** in a familiar context in order to complete a task, where **all of the information required is immediately available to the learner.**
L3/C3	• Analysing, Evaluating, Creating • Problem-solving • Productive thinking/ Applying understanding	Requires **reasoning/investigation/developing a plan** or sequence of steps; has some complexity where candidates need to see how parts relate to a whole and completing a task could have more than one possible approach. It could also require weighing possibilities, deciding on most appropriate solution and testing to locate errors/troubleshooting, as well as pattern recognition and generalisation. These questions will comprise actions/strategies/procedures where candidates are required to create their own solutions to challenges different to those learners may have encountered in the classroom. These questions could include analysing documents or data, and decision-making.

2.2 Levels of difficulty

Levels of difficulty are categorised as follows:

D1: Easy for the average[1] Grade 12 candidate to answer
D2: Moderately challenging for the average Grade 12 candidate to answer
D3: Difficult for the average Grade 12 candidate to answer
D4: Very difficult for the average Grade 12 candidate to answer. The skills and knowledge required to answer the questions at this level allow for an A-grade candidate (extremely high-achieving/ability learner) to be distinguished from other high-ability/proficiency candidates.

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[1] The term *average Grade 12 candidate* refers to an average Grade 12 candidate in South Africa that has been taught the full curriculum using the correct resources by a qualified teacher, and not the average learner in a particular school or class.

In judging the level of difficulty of each question, both the demands that each question makes on the cognitive ability of an average Grade 12 CAT learner and the intrinsic difficulty of the question or task is considered. In making this judgement, the difficulty or ease of a particular question is identified. A four-category framework[2] **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 difficulty:** This refers to the difficulty of the subject matter, topic or conceptual knowledge; some content is inherently more difficult than other content.
- **Stimulus difficulty:** This relates to the linguistic features of the question and the challenge that candidates face in reading, interpreting and understanding the question.
- **Task difficulty:** This refers to the difficulty that candidates face when trying to formulate or produce an answer. In this respect, answers requiring paragraphs are inherently more difficult than questions requiring a single word/phrase as answer.
- **Expected response difficulty:** This refers to difficulties because of the mark scheme or memorandum/marking guidelines, in other words how marks are to be allocated. Therefore, answers to multiple-choice questions on a specific topic could be easier than questions where a candidate has to construct a coherent response.

The estimated percentages for each level of difficulty within each cognitive level as per the January 2021 Abridged Section 4 amendments of the CAPS are shown in the table below.

	D1	D2	D3	D4	TOTAL
C1	±10%	±10%	±10%	-	±30%
C2	±10%	±15%	±13%	±2%	±40%
C3	±10%	±10%	±7%	±3%	±30%
TOTAL	±30%	±35%	±30%	±5%	100%

3. ASSESSMENT IN PAPER 1 (PRACTICAL)

3.1 Software

- **Application software**

  o Circular S9 of 2015 states the following: 'As from January 2016, the DBE will only use Microsoft Office to implement and assess the CAT curriculum.'
  o The following three versions of MS Office will be used: MS Office 2019/Microsoft 365, MS Office 2016 and MS Office 2013.
  o 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.

- **Web design software**

  o A text editor, preferably Notepad++, **MUST** be used to answer the web development question in the question paper.
  o **ANY HTML QUESTION ANSWERED USING A WORD PROCESSOR OR OTHER WEB DESIGN SOFTWARE, E.G. DREAMWEAVER, WIX, WORDPRESS, WILL NOT BE MARKED.**

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[2] Refer to the Exemplar Book on Effective Questioning: Computer Applications Technology that can be found at https://www.umalusi.org.za/documents/reports/#1558861306122-1980558e-2e8a

Refer to Annexure G, *Government Gazette No. 37651*, 16 May 2014 (formerly contained 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.

3.2 Scope (as per the January 2021 Abridged Section 4 amendments of the CAPS)

TOPIC	MARKS	CONTENT/FOCUS
Word processing	±45	One or more main questions containing subquestions related to the content, concepts and skills in word processing
Spreadsheets	±40	One or more main questions containing subquestions related to the content, concepts and skills in spreadsheets
Databases	±35	One or more main questions containing subquestions related to the content, concepts and skills in databases An input mask character sheet will be provided for use with questions on the database application.
Web Development	±15	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	±15	Integration and application of techniques, knowledge and procedural skills that could include all of the applications studied
TOTAL	**150 marks**	

3.3 Content

Clarification of existing and additional content for Paper 1:

File management

Learners may be required to extract files from compressed folders, either as part of the examination or they may be required to extract/unzip a compressed folder to access all the data files to be used in an examination. This means that the data might be provided in the form of a password-protected executable file where the data is distributed, e.g. as **CATP1DataNov2022.exe**.

Learners must do the following:
- Open the password-protected executable file.
- Click on the extract button.
- Enter the password that will be given in the question paper, e.g. #@Nb!".

Once extracted, the data files to be used in the examination will be found in the **CATP1DataNov20xx** folder.

Word processing

- Collect data via electronic/online forms, e.g. Microsoft forms, Google forms. (CAPS p. 31 and p. 41)
- Use of word processing electronic forms: Legacy controls should be used to answer questions regarding electronic forms. Include radio buttons as part of the GUI. (CAPS p. 31 and p. 41).
- Referencing features, including Index and Table of Figures (CAPS p. 36)

Spreadsheets

- Spreadsheet function vs spreadsheet formula: For examination purposes in CAT, a function is viewed as a single built-in or predefined formula in Excel which receives arguments in brackets. A formula is user-defined and may include two or more built-in functions.
- A formula or a formula made up of a combination of more than one function may be required to solve more complex problems.
- Basic date and time functions (CAPS p. 40): YEAR, MONTH, DAY, DATE, DAYS, HOUR, MINUTE, SECOND, TIME, TODAY, NOW
- Named ranges in spreadsheets, i.e. naming cells and cell ranges
- Variations of known functions: COUNTIFS, SUMIFS (CAPS p. 40)
- Functions such as IFS and XLOOKUP are optional (for schools using Microsoft 365) and can be used when answering questions in the practical paper.
- Lookup and reference functions: VLOOKUP, HLOOKUP
- Additional spreadsheet functions: (EG 2017)
  - RANDBETWEEN
  - UPPER, LOWER
  - AND, OR
- Additional spreadsheet feature: SUBTOTAL feature (not function)

Databases

- Candidates must be able to interpret and deduce data and information found in database tables. For example, they should be able to derive the data type or validation rule of certain fields without being instructed exactly which data type to use.

HTML (Refer to Annexure A: HMTL tag sheet)

- The underline tag: <u> </u>
- Links to bookmarks, e-mails, websites and files
- The cite tag to acknowledge sources for the PAT: <cite>

General

- **Transfer of skill** – skills learnt in one application may be tested in another application. For example, conditional formatting or data validation taught in Excel, could appear in Access and so can lists/combo boxes be examined across the applications, Find and Select taught in Word could appear in Access or Excel, etc.
- Candidates are required to distinguish between closely related skills, e.g. shade and shadow, etc.
- As per 3.2, the total mark for the practical examination (Paper 1) is 150 marks and no longer 180 marks.
  This change will be accommodated in the paper as follows:
  The **number** of subquestions will be reduced in order to allow more learners time to complete the paper.

Accuracy in the demonstration of skills has been gradually introduced over the past few years and **must now be complied with in all questions**. In other words, no mark will be allocated to the inaccurate demonstration of a skill, e.g. applying the skill to text in the wrong place, or not using a prescribed colour when asked to do conditional formatting. However, where a question counts more than one mark, part marks will be allocated where the skill to be demonstrated requires multiple actions and only a part of the answer is correctly given.

4. ASSESSMENT IN PAPER 2 (THEORY)

4.1 Action words/Verbs used in examination papers

Words, such as define, describe, discuss, explain, name and state, are used for a reason: different cognitive levels are tested. A much higher cognitive level is tested when you have to *discuss* something than when you merely have to *name* or *make a list of items*.

Action words/Verbs in an examination paper may guide learners in exactly what to include in their answer. Knowing the meaning of the action words in the questions will guide learners to know what is required from the questions. The list below is comprehensive, but not exhaustive, and gives a general guideline as to what is expected when these action words are used.

Action Verb	Meaning	Example	Notes
Analyse	Find the main ideas, how they are related and why they are important.	**Analyse** the correct use of word processing features in the following screenshot:	Break into parts/sections. Study each part – look at the detail.
Arrange	Order the items by listing several items (terms or events) in the correct sequence.	**Arrange** the storage media according to their capacity.	Arrange from small to large, few to many, slow to fast, write down the steps in order, etc.
Categorise/ Classify	Group concepts/ideas that are similar/have the same characteristics/ functions or belong together.	**Categorise** the following computer devices: keyboard, CPU, printer, mouse, hard drive, SSD according to their main function.	Which categories can describe the function/features? Understand relationships.
Compare/ Differentiate	Show both the differences and the similarities of specific concepts.	**Compare** *ROM* with *RAM*.	Find a relationship between two concepts. Which features/functions/uses are alike/differ?
Define	Give a clear, concise **formal** meaning of a term or concept.	**Define** the term *phishing*.	Use short, concise description of **main** features, focus on facts – in a sentence or two.
Describe	Give the main features by expanding the statement.	**Describe** *spoofing*.	Show your understanding of the concept.
Diagram	Make a graph, chart or drawing. Be sure to label it and add a brief **explanation** if necessary.	Use a **diagram** to illustrate a generic ICT system.	Visual representation of the main ideas/concepts/parts of something

Action Verb	Meaning	Example	Notes
Discuss	Present arguments for and against a point of view and reach a conclusion.	**Discuss** the use of a PAN in a home office.	Look at the advantages and disadvantages, decide what will work/not work, explain why it will be a good idea or not a good idea.
Evaluate	Give an opinion. Show the advantages and disadvantages.	**Evaluate** the merit of buying computer X for person Y.	Why would computer X be better than computer A? **Judge** the value of a situation/advice/concept.
Explain	Give full reasons or **justifications** for something, or how and why something happened or works.	**Explain** how phishing works.	Explain things about the topic such as: What is it? Where/When is it used/found? Why is it used/needed? How is it used? Explanations should be brief and will not necessarily require technical details.
Give	Give ONE or more reason(s) or example(s) in a full sentence.	**Give TWO reasons for using an ISP.**	Used when reasons or examples are required.
Identify	Recognise and **name** or provide a fact. Single out from other information.	**Identify** the port used to connect the printer.	Similar to **name**
Justify	Give a statement of why you think something is the way it is. Give reasons for your statement or conclusion.	**Justify** the use of a table instead of tab stops in the following instance:	What is the situation? Why is the one better than the other?
Name/ List	**Name** – to give one word for a term or concept **List** – when two or more items are required	**Name** ONE storage device. **List** the types of information sources one could use when doing research.	Used for all one-word answers or answers consisting of lists of items.
Motivate	Provide a reason or **justification** for an answer or statement.	**Motivate** the use of line and paragraph spacing when working in Word.	Why do you say so/suggest something? Why did it happen? Why is this better than that?
Suggest	**Analyse** or **examine** a problem/case and give possible reasons/ideas/ solutions.	**Suggest** a computer configuration for Mr X.	What is the situation/what is given? What is needed? What would be the best? Why this?

TRUE/FALSE-response questions

Learners are expected to write the word FALSE and give the term to make the false statement TRUE. However, should a learner provide only the term to make the statement TRUE, he/she should not be penalised. No mark will be allocated if only the word FALSE appears.

4.2 Scope

TOPIC	MARKS	CONTENT/FOCUS
SECTION A		
Short Questions	**25**	This section will include all/some of the following: • Multiple-choice questions covering all topics • Matching columns questions covering all topics • Modified True/False questions covering all topics
SECTION B		
Systems Technologies	**±25**	Questions relating to the content, concepts and skills in the topic as listed in the CAPS document, including (but **NOT** limited to): • Computer hardware in all its different forms and configurations • Peripheral devices, such as printers, routers, scanners • System and application software • Housekeeping and management of computing devices • Basic troubleshooting, etc. Refer the CAPS document for a detailed list of topics that may be asked in this section.
Internet and Network Technologies	**±15**	Questions relating to the content, concepts and skills in the topic as listed in the CAPS document, including (but **NOT** limited to): • What is a network and why would one want to use a network? • Network hardware and software • Types of networks, e.g. PAN, LAN, WAN • The internet and internet services and the World Wide Web • Websites, web technologies and browsers • E-communications, including e-mail, instant messaging Refer the CAPS document for a detailed list of possible topics that may be asked in this section.
Information Management	**±10**	Questions relating to the content, concepts and skills in the topic as listed in the CAPS document, including (but **NOT** limited to): • 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, etc. Refer to the CAPS document for a detailed list of possible topics that may be asked in this section.

TOPIC	MARKS	CONTENT/FOCUS
Social Implications	±10	Questions relating to the content, concepts and skills in the topic as listed in the CAPS document, including (but **NOT** limited to): • The impact of ICTs on society • Legal, ethical and security issues related to the use of ICTs • Educational and ergonomic issues • Environmental issues, including green computing, etc. Refer to the CAPS document for a detailed list of possible topics that may be asked in this section.
Solution Development	±15	Questions focusing on the knowledge, understanding and development of solutions using application software. These questions will essentially revolve around the theoretical aspects of the applications studied.
SECTION C		
Integrated Scenario[3]	**2 x ±25 = 50**	Candidates will be presented with TWO real-life scenarios on which questions, covering all topics, will be examined. The questions will assess candidates' understanding of the technologies, their ability to make informed decisions ranging from choice of technology, application software to be used, networking, etc., through to the responsible use of such technologies.

NOTE:
• The content 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, thus topics might be examined in different sections/questions from year to year, depending on examiner discretion.
• Operational knowledge from Paper 1 in terms of understanding where, how and why various functions, techniques and concepts are applied in problem-solving contexts may also be examined in any of the sections of this paper. This also includes interpreting simple error messages and assessing the best options and strategies in a given situation.

4.3 Content

The CAPS (p. 18) suggests the inclusion of newer technologies and a phasing out of old technologies as there is a rapid development in the subject which should be reflected in what the learners are taught and what is examined. This Examination Guidelines document lists the new technologies that can be expected in the examination paper and outlines the depth of knowledge required for an end-user.
The depth of knowledge required for all the existing concepts and terminology below includes, inter alia:
• Definition – what it is
• Purpose/Function – what it does, why it is needed
• Advantages/Disadvantages
• Benefits/Limitations
• Application in an ICT environment

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[3] The two questions in Section C may each have a different scenario.

4.3.1 Clarification of some existing concepts and newer technologies for Paper 2

Most of the technologies and concepts below are listed in the CAPS. The depth of knowledge required is as listed in 4.2 above, but some aspects in respect of these technologies/concepts are clarified below.

Storage devices and media:

- **Solid-state drive:** A drive that has no moving parts, making it quieter and more robust. They operate much faster than traditional hard drives as they store data electronically and not magnetically as with a traditional hard drive. (CAPS p. 22)
- **Card reader:** A device connected to a computer that is designed to accept and read data from different types of storage media, such as SIM and SD cards and flash drives. (CAPS p. 22)

Input and output devices:

- **Multi-touch screen:** Feature of a screen that allows it to register more than one point being touched simultaneously. (CAPS p. 22)
- **HDMI:** High-definition multimedia interface is a standard/port for connecting high-definition video devices, such as computer monitors, video projectors and digital television. HDMI carries high quality video and audio signals, and there is no need for separate audio cables as with VGA. (CAPS p. 30)
- **3D printing/printers:** 3D printers can create three-dimensional solid objects (e.g. motor vehicle parts, human tissue replacement, jewellery, clothing, small buildings, small boats) from a digital model of the item by adding successive layers of material on top of one another. (CAPS p. 20)

Communication and communication devices:

- **Standards for wireless communication** which provides for high-speed data transfer between cellular devices (such as smartphones and tablets) and ISPs. Each generation, e.g. 5G or 6G, increases the capacity and speed of previous mobile connections. (CAPS p. 35)
- **NFC:** Near field communication (NFC) is a standard that allows devices such as smartphones to connect wirelessly simply by touching them together or bringing them into close proximity to, for example, exchange files by just touching two smartphones together or for sending a file from a smartphone to a printer wirelessly. (CAPS p. 35)
- **Video communications** – also include platforms such as Zoom, Microsoft Teams and Google Meet.

Internet technologies:

- **URL shortener:** This is a tool or service, such as TinyURL.com, which converts 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. (CAPS p. 25)
- **Internet of Things (IoT):** This refers to the trend whereby all sorts of objects and devices are increasingly being connected to one another via the internet. This can range from surveillance systems to geysers, washing machines, 'smart' vehicles and traffic lights, etc. Various sensors in the devices can produce data for all sorts of purposes, including diagnostics and running systems more efficiently. (EG 2017)
- **Autonomous vehicles:** A self-driving car, also known as an autonomous vehicle, driverless car, or robo-car is a vehicle that can sense its environment and move safely with little or no human input.

- **Drone technology:** A drone, is an unmanned aircraft. Essentially, a drone is a flying robot that can be remotely controlled or fly autonomously through software-controlled flight plans in their embedded systems, working in conjunction with on-board sensors and GPS. They are widely used in agriculture, photography, game ranging, parcel deliveries, etc.
- **Wearable devices and technologies:** Wearable technologies such as electronic mobile devices worn as accessories or part of clothing, e.g. smartwatches or fitness/health trackers, smart glasses, continuously generating data from various environments and communicating with other devices/PC/networks.
- **Shaping (Network tuning):** A technique whereby certain network (internet) services, e.g. e-mail, are given preference while others, such as social networking services, are given less priority, thus performance is maintained for the more critical services. (EG 2017)
- **Throttling (Policing):** This occurs when your ISP slows down your internet connection. This most often occurs when you have been deemed by your ISP to have downloaded excessive amounts of data. Each ISP has an acceptable use policy (AUP) which specifies how this is determined and implemented. (EG 2017)

Properties/Metadata:

- **Geo-tagging:** A process where a geographical position of where a photograph was taken is added to the metadata of a file, such as adding the latitude and longitude. (CAPS p. 40)

Cyber security issues:

- **Click-jacking:** Users are tricked into clicking on an item on a web page which acts as a concealed link. (CAPS p. 42)
- **Ransomware:** A type of malware designed to encrypt or block access to your computer system and files until you pay a sum of money ('ransom'). (EG 2017)
- **Screen lock pattern:** A way of locking a device by setting up a pattern you must draw or trace on the screen to unlock the device. (EG 2017)
- **Authentication (Internet safety):** Two-factor (two-step) authentication: includes the use of CAPTCHA, OTP (one-time pin/password), ApproveIt messages, etc.

How technology can benefit society/social implications

- **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: www.indiegogo.com and www.kickstarter.com. (CAPS p. 45)
- **BYOD:** Bring your own device (BYOD) refers to a concept where employees/students are allowed to bring and use their own portable devices, such as smartphones, laptops, tablets, to work on and access the network instead of a device owned/supplied by the company/ institution. (CAPS p. 32)
- **Big data:** Very large structured and unstructured data sets that are analysed using computers to reveal trends and associations. These present challenges, such as storage, curation, querying, visualisation. (EG 2017)
- **Cryptocurrencies** (e.g. Bitcoin, Ethereum, Luno): This is a form of virtual, digital currency. Bitcoins can be exchanged for other currencies, products and services. They have caused concern because they are often used for payment in criminal activities, such as ransomware demands. However, more and more legitimate companies are accepting them as a means of payment. (EG 2017)

- **E-learning:** The creation of a learning environment where individuals use their computers to take part in teaching and learning to further their education
- **Mobile or M-Learning:** A form of education and training delivered and conducted via the internet using mobile devices, such as tablets and smartphones. It is designed to be flexible, allowing learners/workers/students access to education anywhere, anytime. (EG 2017)
- **Virtual reality (VR):** This refers to using technology to create a simulation of a 3D environment that can be interacted with by a person in a seemingly real or physical way. This is achieved by using equipment, such as helmets with screens and gloves fitted with sensors. (EG 2017)
- **Augmented reality (AR)** uses types of technology similar to VR but does not create a totally virtual environment like VR. Instead, it takes the physical world and adds (augments) objects, such as graphics, within the real world. Both VR and AR are used in areas ranging from entertainment (e.g. the augmented reality game Pokémon GO), training in aircraft simulators, and healthcare (e.g. an app used to highlight veins when a drip is inserted or surgeons being able to perform remote surgery on patients.
- **AI (artificial intelligence):** Refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions, especially traits associated with a human mind, such as learning and problem-solving. Machine learning is the study of computer algorithms that improve automatically through experience and by the use of data. It is seen as a part of artificial intelligence.
- **4IR (the fourth industrial revolution):** 4IR is a way of describing the blurring of boundaries between the physical, digital and biological worlds. It is a blend of advances in artificial intelligence (AI), robotics, the Internet of Things (IoT), 3D printing, genetic engineering, quantum computing and other technologies. It creates many products and services that are fast becoming essential to modern life and is the collective force behind disrupting almost every business sector.
- **5IR (the fifth industrial revolution):** 5IR runs and develops alongside 4IR and uses the advantages 4IR brings to put the focus back on humans and human endeavour, defining the ethics and impact of technology developed in the 4IR.
- **Blockchain:** The name of a whole new technology. It is a sequence of blocks or groups of transactions that are chained together and distributed among the users.
  'The blockchain is an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions, but virtually everything of value.' – Don & Alex Tapscott
  It works as **an indisputable record of transactions that do not require reliance on an external authority** to validate the authenticity and integrity of the data. Transactions are typically economic, but **we can store any kind of information** in the blocks.

[Adapted from https://medium.com/swlh/blockchain-for-dummies-d3daf2170068]
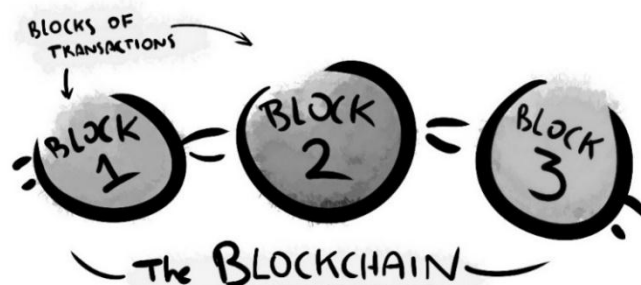
4.3.2 Technology/Concepts that will no longer be examined

As technology improves, many technologies may become obsolete or will no longer be relevant and will therefore not be examined.

Concepts/Technologies that will no longer be assessed from 2021 onwards:

- CRT monitors
- Digital migration
- Encarta
- Fax/Fax modems
- FireWire
- Freeware/Shareware software
- FTP
- MICR
- MySpace
- OMR

- PDA
- RSS Feeds (social media platforms and e-mail subscriptions seem to be making this a technology less used these days.)
- Second Life
- Stand-alone vs. integrated software in terms of Office Suites
- Trackball mouse
- Widgets

4.3.3 Clarification of blurred technology/concepts

In other cases, the set differences between devices/technologies may have become blurred. As a result, some aspects of these concepts/devices will not be examined in order to avoid confusion for the candidates, as well as during the marking process.

- Devices such as **printers** WILL BE examinable, but the comparisons between various printer types will NOT be examinable.
- **802.11 a/b/g/n:** Candidates should know that 802.11 refers to a Wi-Fi connectivity standard. The details on the specific standards, i.e. a/b/g/n, will NOT be examinable. (CAPS p. 35)
- The concept of a **plug-in** as a way of customising the browser or program has been largely replaced by **add-on**, which is an extension of the software. Candidates will NOT be required to distinguish between these two concepts. The term **add-on** will be preferred.
- Candidates will no longer be required to distinguish between a **phablet** and a **tablet**. A **phablet** is a small screen tablet or a larger screen smartphone.
- **Modem and router:** Distinguish between the function of a modem and the function of a router, even if it is one converged device.
- **Differentiation between LCD and LED monitors will NOT be examined.**

5. CONCLUSION

This Examination Guidelines document is meant to articulate the assessment aspirations espoused in the CAPS document. It is therefore not a substitute for the CAPS document which teachers should teach to.

Qualitative curriculum coverage as enunciated in the CAPS cannot be over-emphasised.

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**
`<hl></hl>`	Creates the largest heading
`<h6></h6>`	Creates the smallest heading
`<b></b>`	Creates bold text
`<i></i>`	Creates italic text
`<u></u>`	Creates underlined text
`<font size="3"></font>`	Sets size of font, from "1" to "7"
`<font color= "green"></font>`	Sets font colour
`<font face="Times New Roman"></font>`	Sets font type

Links Tags	
Tag	**Description**
`<a href="URL"></a>`	Creates a hyperlink
`<a href="URL"><img src="name"></a>`	Creates an image link
`<a name="NAME"></a>`	Creates a target location in the document
`<a href= "#NAME"></a>`	Links to a target location created somewhere else in the document
`<cite></cite>`	Defines the title of a creative work

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"
`<ol></ol>`	Creates a numbered list
`<ol type="A","a", "I","i","1"></ol>`	Defines the type of numbering used
`<ul></ul>`	Creates a bulleted list
`<ul type="disc", "square","circle"> </ul>`	Defines the type of bullets used

Formatting Tags continued	
Tag	**Description**
`<li></li>`	Inserted before each list item, and adds a number or symbol depending on the type of list selected
`<img src="name">`	Adds an image
`<img src="name" align="left">`	Aligns an image: can be "left", "right", "bottom", "top"
`<p align="center"><img src="name"></p>`	Aligns an image in the "center", can also be "middle"
`<img src="name" border="1">`	Sets the size of the border around an image
`<img src="name" width="200" height ="200">`	Sets the height and width of an image
`<img src="name" alt="alternative text">`	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 cellspacing="1">`	Sets the space between the table cells
`<table cellpadding="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

ANNEXURE B: INPUT MASK CHARACTER SHEET

CHARACTER	DESCRIPTION
0	Digit (0 to 9, entry required, plus [+] and minus [–] signs not allowed)
9	Digit or space (entry not required, plus [+] and minus [–] signs not allowed)
#	Digit or space (entry not required; spaces are displayed as blanks while in Edit mode, but blanks are removed when data is saved; plus [+] and minus [–] signs allowed)
L	Letter (A to Z, entry required)
?	Letter (A to Z, entry optional)
A	Letter or digit (entry required)
a	Letter or digit (entry optional)
&	Any character or a space (entry required)
C	Any character or a space (entry optional)
. , : ; - /	Decimal placeholder and thousand, date and time separators (The actual character used depends on the settings in the **Regional Settings Properties** dialog box in the Windows Control Panel.)
<	Causes all characters to be converted to lower case
>	Causes all characters to be converted to upper case
!	Causes the input mask to display from right to left, rather than from left to right. Characters typed into the mask always fill it from left to right. You can include the exclamation point anywhere in the input mask.
\	Causes the character that follows to be displayed as the literal character (for example \A is displayed as just A)
""	Characters enclosed in double quotation marks will be displayed literally.