

**EKURHULENI NORTH
DISTRICT**

**PRELIMINARY EXAMINATIONS
COMPUTER APPLICATIONS TECHNOLOGY
GRADE 12
PAPER 2: THEORY**

**MARKS: 150
TIME: 3 hours**

This question paper consists of 17 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 of the answer sheets.
6. Leave a line after EACH sub-question.
7. In general, a mark is allocated per fact. A 2-mark question would therefore require TWO facts, etcetera.
8. Write neatly and legibly.

SECTION A**QUESTION 1: 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 (1.1 - 1.10) in the ANSWER BOOK, for example 1.11 D.

QUESTION 1: MULTIPLE CHOICE

- 1.1. This technology creates a simulation of a 3D environment that can be interacted with, by a person in a seemingly real or physical way.
 - A. Internet of things (IoT)
 - B. Digital migration
 - C. Virtual reality (VR)
 - D. M-Learning

- 1.2. Which ONE of the following pagination options can be used to stop a heading splitting from the paragraph across two pages in Word?
 - A. Keep with next
 - B. Widow/Orphan control
 - C. Page break before
 - D. Keep lines together

- 1.3. Which ONE of the following is an example of secondary memory?
 - A. RAM
 - B. ROM
 - C. Printer
 - D. Memory Card

- 1.4. Which ONE of the following acronyms is NOT associated with hardware?
 - A. GPU
 - B. BYOD
 - C. EULA
 - D. SSD

- 1.5. Which ONE of the following functions will calculate the number of cells in the range A1:A25 that has a value of more than 17?
 - A. =COUNTIF(A1:A25,"<17")
 - B. =COUNTIF(A1:A25,"<>17")
 - C. =COUNTIF(A1:A25,">=17")
 - D. =COUNTIF(A1:A25,">17")

- 1.6. Which ONE of the following users have computing needs that make the top of the range hardware and software indispensable, e.g. architects and engineers?
 - A. SOHO user
 - B. Power user
 - C. Mobile user
 - D. Personal user

- 1.7. The letters 'a / b / g / n' refer to data transmission over a/an ... connection.
- A. Fibre
 - B. Wi-Fi
 - C. ADSL
 - D. 3G
- 1.8. Which ONE of the following is NOT a crucial component in influencing the performance of a computer system?
- A. ROM
 - B. SSD
 - C. RAM
 - D. CPU
- 1.9. Which ONE of the following terms refers to the total amount of data that can be transferred from one point to another in a given period of time.
- A. Shaped
 - B. Broadband
 - C. Bandwidth
 - D. Cap
- 1.10. ... 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.
- A. Shaped
 - B. Capped
 - C. Transmitting
 - D. Throttling

(10 × 1) [10]

QUESTION 2: MATCHING COLUMNS

Choose a term/concept from COLUMN B that matches a description in COLUMN A. Write only the letter (A–S) next to the question number (2.1–2.10) in the ANSWER BOOK, for example 2.11 V.

Column A	Column B
2.1. A policy which outlines the rights and responsibilities of its users, especially in networked environments.	A. NFC B. Template C. HDMI D. Spam E. LTE F. Style G. Big data H. Click-jacking I. AUP J. Bot K. Primary key L. Adware M. Bluetooth N. DoS attack O. Target audience P. 2G Q. EULA R. VGA S. Target group T. Digital migration U. Input Mask
2.2. The group you are trying to inform or report to. This needs to be considered in order to know at which level information should be 'pitched'.	
2.3. A standard/port for connecting high-definition video devices, such as computer monitors, video projectors and digital television.	
2.4. A field that identifies each record with a unique value in Access.	
2.5. A standard that allows devices such as smartphones to connect wirelessly simply by touching them together or bringing them into close proximity.	
2.6. A computer that has been compromised (or infected) and can be controlled remotely when it is on and connected to the internet.	
2.7. A combination of formatting attributes such as font size and type, and paragraph spacing, saved as a collection under one name.	
2.8. An attack in which a site appears to do one thing, but your clicks are actually redirected to do something else.	
2.9. A standard used in wireless communication which provides for high-speed data transfer between cellular devices (such as smartphones and tablets) and ISPs.	
2.10. A very large structured and unstructured data sets that are analysed using computers to reveal trends and associations.	

(10 × 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
On a <u>shaped</u> ADSL account, priority is given to emails, web browsing, internet banking and 'normal' downloads via a web browser.	True
<u>Utility</u> software is needed if a new printer does not automatically install on a computer.	False – Driver

- 3.1 Formatting is a process where files and folders are made smaller in size without losing any information. (1)
- 3.2 Aspect ratio is the number of steps between the darkest black and the brightest white that a display device can produce. (1)
- 3.3 Bandwidth provides always-on, high speed Internet connection and is ideal for fast downloads of software, photos, videos and music. (1)
- 3.4 Grid computing refers to the sharing of resources such as programs and data storage offered as a service over the Internet. (1)
- 3.5 .dotx is the file extension for a Microsoft Word Template. (1)

(5x1) [5]**TOTAL SECTION A: 25**

SECTION B

QUESTION 4: SYSTEM TECHNOLOGIES

- 4.1 During the Covid-19 pandemic, various South African Universities started to design and manufacture respirator parts using 3D printers.
- 4.1.1 Briefly explain how this is possible by referring to the way a 3D printer works. (1)
- 4.1.2 Give THREE reasons why 3D printers are not commonly used in a home office. (3)
- 4.2 Files with an HTML extension open in Notepad instead of a browser. Suggest a possible solution to this problem. (1)
- 4.3 The operating system is very important for the computer system to work.
- 4.3.1 Name ONE open source operating system that can be used as alternative for proprietary system software. (1)
- 4.3.2 List TWO advantages of open source software (OSS). (2)
- 4.3.3 Indicate the difference between open source software and freeware. (1)
- 4.4 Suggest TWO methods that could be used to repair a flash drive that has been infected with a virus. (2)
- 4.5 You are considering buying a portable computer. The salesclerk indicates that you must ensure that the computer has a HDMI port. Indicate TWO advantages of an HDMI port over a VGA port on the computer. (2)
- 4.6 You can choose between a hard disk drive (HDD) or a solid-state drive (SSD) for the computer. State TWO advantages other than speed of a SSD over a HDD. (2)

4.7 A local distributor is advertising a PC upgrade kit:



This Bundle Includes

- MSI B450M PRO-M2 MAX USB 3.2 AM4 Motherboard
- AMD RYZEN 5 1600 Processor - 19MB Cache, 3.6GHz Turbo, 65W TDP
- KLEVV BOLT X 8GB 3200MHz DDR4 memory.
- AMD Wraith CPU Cooler

4.7.1 Indicate the speed of the CPU (1)

4.7.2 Indicate the size of the RAM (1)

4.7.3 To improve the performance of the computer the user can upgrade two components not mentioned in the advertisement. Name ONE of the components. (1)

4.8 Computers need drivers to function properly.

4.8.1 Explain what a driver is by referring to its function. (2)

4.8.2 When one uses a plug and play device, why doesn't the operating system ask for a driver to be installed? (2)

4.9 Your school is planning to implement BYOD for use by the learners. Explain what "BYOD" means. Do not only write out the acronym. (2)

4.10 You have used a scanner to scan an article from a magazine and it was saved as an image. (1)

What type of software do you need to convert images or text to editable text?

[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

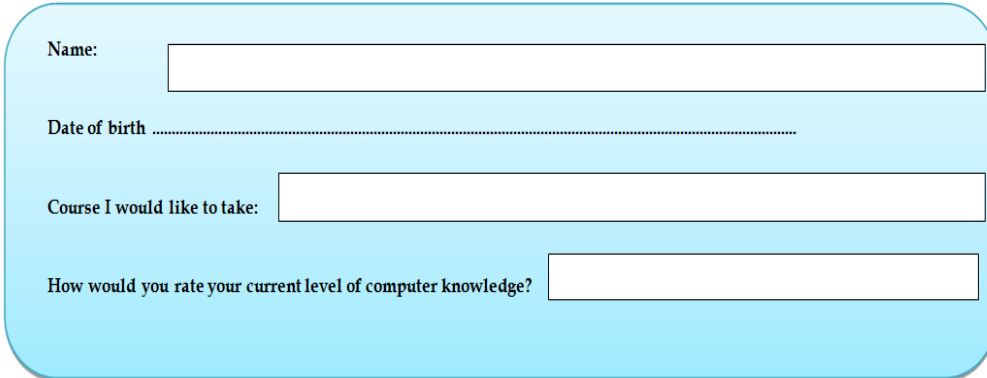
- 5.1 You are considering subscribing to a broadband internet package:
- 5.1.1 Name the type of internet connection that uses light for data transmission. (1)
 - 5.1.2 The brochure refers to 10 Mbps uncapped data. What does the word “uncapped” refer to? (1)
 - 5.1.3 Explain TWO benefits/advantages of using cloud computing. (2)
 - 5.1.4 Bitcoins (BTC) are a form of virtual, digital currency. Discuss two disadvantages of Bitcoins. (2)
- 5.2 How can a group of people access the internet simultaneously from their cell phones if only one of them has data on his phone? (2)
- 5.3 Other than offering wireless and wired Internet access, list TWO services ISPs typically offer. (2)
- 5.4 What is the purpose of the home page setting on a web browser? (1)
- 5.5 During Internet surfing, the warning "Pop-up blocked" often appears.
- 5.5.1 What is a *pop-up*? (1)
 - 5.5.2 It is advisable to block pop-ups. Motivate the statement by giving ONE reasonable motivation. (1)
- 5.6 Give TWO limitations of e-commerce. (2)

[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1 Vuzi created a questionnaire to see if members of the community are interested in any computer courses.

6.1.1 The questionnaire he created is shown below. Evaluate the overall design of the questionnaire by suggesting improvements. (2)



The image shows a questionnaire form with a light blue background and rounded corners. It contains four input fields:

- Name: [Text input field]
- Date of birth [Text input field]
- Course I would like to take: [Text input field]
- How would you rate your current level of computer knowledge? [Text input field]

6.1.2 Give two possible benefits of allowing the respondents to fill out this form electronically on a computer in the centre. (2)

6.1.3 Vuzi decided to allow the respondents to fill out the form electronically. The completed forms were captured in a *Word* document, and Vuyani performed the following file conversion on this document:

Document1.docx → Survey_results.txt

6.1.3.1 Suggest a reason why he changed the *file name* from *Document1* to *Survey results*, besides to avoid confusing it with the original document. (1)

6.1.3.2 What is the most likely reason he changed the file extension? (1)

6.2 As we live in the Information era, we are exposed to a lot of information. Give TWO reasons why one should verify the quality of information before using it, other than the danger of it being fake news? (2)

6.3 What is the difference in function between a citation and a footnote? (2)

[10]

QUESTION 7: SOCIAL IMPLICATIONS

- 7.1 Green computing is a term used to describe computer usage that is sensitive to the environment.
- 7.1.1 Briefly explain how the use of digital communication contributes to green computing. (1)
- 7.1.2 Give ONE way in which we can limit the amount of electricity we use when working with computers. (1)
- 7.2 Your teacher at school uses the term telecommunicating numerous times when discussing career opportunities.
- 7.2.1 Briefly explain the meaning of the term *telecommunicating*. (1)
- 7.2.2 Give ONE benefit of *telecommunicating*. (1)
- 7.3 There are five forms of social engineering. One of them is Pretexting
- 7.3.1 Explain the term *Pretexting*. (1)
- 7.3.2 Mention ONE way/method of avoiding *Pretexting* attacks. (1)
- 7.4 Many websites insist that you use a strong password.
- 7.4.1 Name TWO characteristics of a strong password. (2)
- 7.5 Discuss, by means of an example, what happens when a user is click jacked. (2)

**[10]**

QUESTION 8: SOLUTION DEVELOPMENT

- 8.1 What is the purpose of applying the “*Page break before*” option to any paragraph in a document? (2)
- 8.2 Study the Excel screenshot below thereafter write down the combination of Excel functions that will be used to create the Entry Code. (3)

The Entry Code consists of:

- First 3 letters of the learner’s Surname in uppercase thereafter,
- First and last letter of their Name together with the
- Last digit of the Age

Example: In F2 ZWEL07

	A	B	C	D	E	F
1	No	Name	Surname	Age	School	Entry Code
2	1	Lerato	Zwene	17	HS Roosevelt	
3	2	Ayesha	Ebrahim	16	Tshwane Muslim School	
4	3	Daniel	Michael	17	HS Waterkloof	
5	4	Joshua	Lambe	15	Randburg High	
6	5	Jaden	Ramlaul	16	Lincoln Heights Secondary	
7	6	Crystel	Sprieman	14	Pretoria High School for Girls	
8	7	Katinka	Vorster	16	HS Vryburger	
9	8	Buhle	Madau	15	Sandringham High School	
10	9	Carmen	Wright	17	Orlando High School	
11	10	Junior	Dixon	16	The Hill High School	

- 8.3 Study the screen shot below and answer the question that follows.

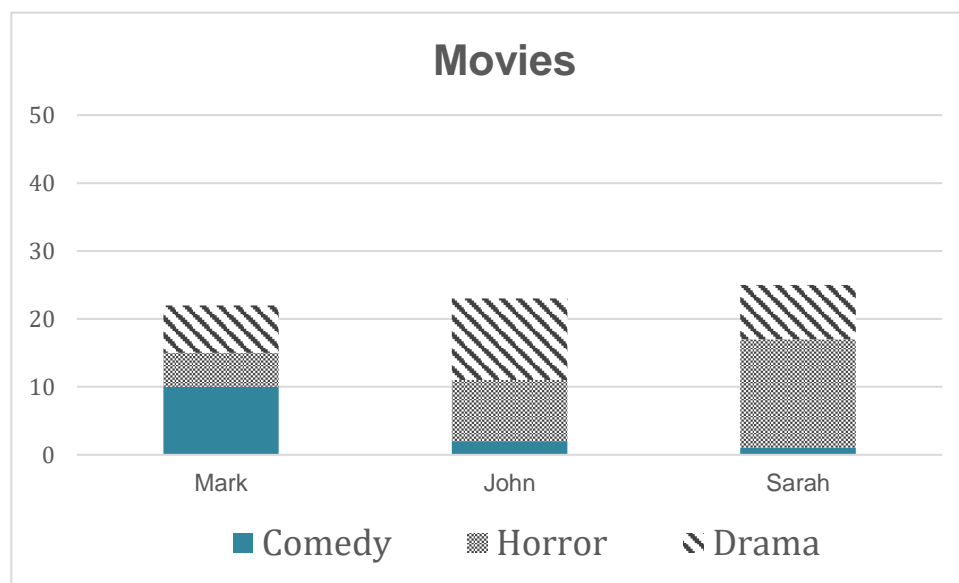
Field Properties	
General Lookup	
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	>=#2020/02/02#
Validation Text	
Required	No
Indexed	No
IME Mode	No Control
IME Sentence Mode	None
Text Align	General
Show Date Picker	For dates

- 8.3.1 Write an appropriate Validation Text for the Validation Rule as seen in the screen shot. (2)

- 8.4 Explain why the words “Prelim Exam” are not going to change to the Impact Font as specified in the HTML code below? (1)

```
<td>
    <font = "Impact"> Prelim Exam </font>
</td>
```

- 8.5 After studying the stacked graph below, state TWO observations that can be made from the information represented by the graph. (2)



- 8.6 When utilising the Mail Merge feature for Labels explain why it is necessary to click “Update all labels” in Step 3. (2)
- 8.7 In HTML explain when you would use the tags “td” and “th” (2)
- 8.8 List ONE feature that may be listed as a problem hampering the readability of a Word document. (1)

[15]


TOTAL SECTION B: 75

SECTION C

QUESTION 9: INTEGRATED SCENARIO

The global pandemic, Covid-19, has highlighted the importance of ICT's in education. Your school is looking into the various options available to teachers and students that can be used in e-learning such as digital textbooks on tablets, Intranets and free ware communication platforms.

- 9.1 Due to the global pandemic many education institutions have closed, however most of these institutions have started sending work home to be completed. *Zoom and MS Teams are some examples of web-based applications that can be accessed on various computing devices.*
- 9.1.1 Explain what is meant by *web-based application* (1)
- 9.1.2 Provide TWO examples of web-based e-mail applications. (2)
- 9.1.3 The principal is aware of a possible problem amongst the students known as the *digital divide*. Explain what the *digital divide* is and how it can impact the move to online education. (2)
- 9.1.4 Web based applications have many advantages as well as disadvantages. List ONE advantage and ONE disadvantage of utilising a web-based application. (2)
- 9.2 Many students have smart phones and tablets instead of computers since these devices are built on *convergence*.
- 9.2.1 Define the term *convergence*. (1)
- 9.2.2 Give ONE disadvantage of convergence. (1)
- 9.3 The deputy principal asked you as a Grade 12 CAT learner for some advice on internet installation and costs, as many parents have enquired about internet and data needs.
- 9.3.1 State TWO benefits of using a proxy server, other than simply providing Internet access. (2)
- 9.3.2 Explain how a learner/teacher can use a search engine to find a video on a specific topic in the syllabus. (2)
- 9.4 With the option of working from home the staff and students will be prone to *Malware* attacks.
- 9.4.1 Explain the term *Malware*. (1)

- 9.5 After reading up on various Malware threats the principal wanted to send out a letter warning parents about possible threats. Two terms that he would like to highlight are *phishing* and *pharming*.
- 9.5.1 Explain what is meant by **phishing** and provide an example thereof. (2)
- 9.5.2 Explain the term **pharming** and provide an example thereof. (2)
- 9.6 While a learner was registering on an online communication platform, he noticed an anti-virus alert notifying him of possible threat activity by a *key-logger* program.
- 9.6.1 Describe how a *key logger* program works and how a user is likely to have gotten it onto their device. (2)
- 9.7 Social media websites and applications have the ability to facilitate communication anywhere in the world. After looking at the various options available, the school has decided to create grade and subject based WhatsApp groups, where teachers can post work and communicate with the learners.
- 9.7.1 Describe TWO advantages of e-learning as opposed to traditional learning. (2)
- 9.8 Teachers and learners enjoy watching videos for education and entertainment.
- 9.8.1 How does **downloading** a video differ from **streaming** a video? (2)
- 9.8.2  (1)

One of the teachers mentioned that he saw the above image on an e-learning pamphlet. Give the name given to these images.

[25]

QUESTION 10: INTEGRATED SCENARIO

Your school has been nominated by the Provincial Department of Education to be one of the first schools to use smart technologies for teaching and learning. Each teacher will receive a ICT package consisting of a laptop, data projector, and E-Beam software and hardware and a document viewer. You are required to answer the following questions to help the teachers understand the new technology better:

- 10.1 State TWO advantages of giving teachers laptops in this situation. (2)
- 10.2 The laptop computers have a standard touch screen
- 10.2.1 State TWO advantages of using a touch screen. (2)
- 10.2.2 What term is given to the action used on a multi-touch screen to make a photograph smaller? (1)
- 10.3 Give TWO examples of biometric features for secure access on a laptop computer (2)
- 10.4 Give TWO ways that can be used to protect the laptops against theft. (2)
- 10.5 Some teachers want to save their files on the “desktop” of their laptops. Why do you think it is not a good idea for teachers to save their files on the desktop? (2)
- 10.6 The school’s governing body has revised the school’s cell phone policy to allow learners to use the school’s hotspot.
- 10.6.1 What is a hotspot? (2)
- 10.6.2 State TWO challenges posed by allowing learners to use their own devices at school. (2)
- 10.7 A multifunction printer will be installed in the staff room so that teachers can access it via a network
- 10.7.1 Write down the acronym of a network found in a school environment. (1)
- 10.7.2 Give TWO ways in which teachers can promote green computing in the school. (2)
- 10.8 You have been asked to create a blog to share with everyone in the school about ways to use computing technologies effectively for teaching and learning . (2)
- Give TWO ways in which you can increase the likelihood that people read the blog regularly.

10.9 One of the employees was trying to open a file on one of the computers, a message appeared indicating that the file is 'read-only'. (2)

Give TWO possible reasons why the file may be 'read-only'.

10.10 The School Management Team (SMT) is going to organise a workshop to educate learners about information overload. (2)

State TWO ways in which learners can avoid becoming victims of information overload.

10.11 While working in an Excel document, how could the school administrator make sure that users cannot select or change the cells that contain functions and formulas? (1)

[25]

TOTAL SECTION C: 50

GRAND TOTAL: 150