



Education

KwaZulu-Natal Department of Education
REPUBLIC OF SOUTH AFRICA

INFORMATION TECHNOLOGY

PAPER 2

JUNE EXAMINATION 2018

**NATIONAL
SENIOR CERTIFICATE**

GRADE 10

MARKS: 100

**Examiner(s): Mr. M. Dzanibe
Mr. T.K. Mkhize**

TIME: 2 hours

Moderator(s): Mrs. S. Rampersadh

This paper consists of 10 pages.

INSTRUCTIONS AND INFORMATION:

1. This paper consists of 7 questions:

SECTION A:	SHORT QUESTIONS	[20]
SECTION B:	SYSTEMS TECHNOLOGIES	[35]
SECTION C:	DATA AND INFORMATION MANAGEMENT	[15]
SECTION D:	SOLUTION DEVELOPMENT	[15]
SECTION E:	SOCIAL IMPLICATIONS	[15]

2. Answer ALL questions on this paper.
3. Read ALL questions carefully before answering.
4. Number your answers according to the numbering system used in this paper.
5. Use marks as a guide on the scope/parameters of your response.
6. It is in your best interest to write neatly and legibly.
7. Pencil should **ONLY** be used for drawings.

SECTION A – SHORT QUESTIONS**QUESTION 1: MULTIPLE CHOICE**

1. Various options have been provided as possible answers to the following questions. Choose the most appropriate answer and write the letter (A – D) next to the question number (2.1 – 2.10) on the folio paper provided, for example 1.11 A.
- 1.1 Which ONE of the following is designed to allow users to write or draw on the screen with a stylus (digital pen)?
- A Tablet
 - B Notebook
 - C Server
 - D Desktop
- (1)**
- 1.2 Which ONE of the following holds data and instructions waiting to be processed and will lose its contents when the power is turned off?
- A EEPROM
 - B CPU
 - C RAM
 - D ROM
- (1)**
- 1.3 Complete the following sentence: A fingerprint reader and voice verification system are examples of scanners.
- A Barcode
 - B Multimedia
 - C Biometric
 - D Geographic
- (1)**
- 1.4 What term is used to describe the number of pixels used to form an image on a screen?
- A Refresh rate
 - B Resolution
 - C Contrast ratio
 - D Response time
- (1)**
- 1.5 Which ONE of the following printers works by melting toner onto the paper?
- A Dot matrix printer
 - B 3D printer
 - C Inkjet printer
 - D Laser printer
- (1)**

- 1.6 Which file format is used to save plain text?
- A PDF
 - B RTF
 - C TXT
 - D HTML
- (1)
- 1.7 Which ONE of the following refers to cellular technology used for data transfer?
- A WIMAX
 - B Bluetooth
 - C Wi-Fi
 - D LTE
- (1)
- 1.8 Which of the following can be classified as a utility program?
- A Notepad
 - B WinZip
 - C Structured Query Language (SQL)
 - D Adobe Reader 8
- (1)
- 1.9. ONE of the following is not a storage device.
- A CD
 - B VDU
 - C HDD
 - D Flash Drive
- (1)
- 1.10 Which ONE of the following is an operating system for mobile devices?
- A Android
 - B Unix
 - C Google Chrome
 - D Linux
- (

SUBTOTAL [10]

QUESTION 2: MATCHING COLUMNS

2. Match the description in column A with a term/phrase in column B. Write only the question number and the letter of the corresponding term/phrase (e.g. 2.1 C)

A		B		
2.1	A high-performance electronic storage device often used to replace traditional hard drives.	A.	Point of sale	(1)
2.2	A computer that provides resources and/or services to other computers on a network.	B.	Truncation	(1)
2.3	Software that controls all the activities that take place in a computer.	C.	Partitioning	(1)
2.4	Software used to effectively manage the movement of stock for supermarket chain stores.	D.	SSD	(1)
2.5	The subdivision of hard drives so that multiple operating system may be installed.	E.	Data warehouse	(1)
		F.	OS	
		G.	Defragmentation	
		H.	Server	

SUBTOTAL [5]

QUESTION 3: TRUE OR FALSE

3. State whether each of the following statements are true or false. If the statement is false, rewrite the statement so that it is true.
- 3.1 The hexadecimal number system is represented by base 10. (1)
- 3.2 CTS is a group of injuries that affect the tendons. (1)
- 3.3 Unicode is a coding system which is limited to 256 different characters. (1)
- 3.4 GNU / GPL is a Copyleft-style copyright license. (1)
- 3.5 A radio button allows the user to choose only one from a given set of options. (1)

SUBTOTAL [5]

TOTAL: SECTION A [20]

SECTION B – SYSTEMS TECHNOLOGIES**QUESTION 4: HARDWARE AND SOFTWARE**

- 4.1 **A computer is a multipurpose electronic tool that can receive data as input, process the data produce results and output them.**
- 4.1.1 Differentiate between hardware and software by explaining what each one is. (2)
- 4.1.2 List TWO input devices and TWO output devices. (4)
- 4.1.3 Give TWO differences between Solid State Drives (SSDs) and Hard Disk Drives (HDDs). (4)
- 4.1.4 What is the Firewire port mostly used for? (1)
- 4.1.5 Give ONE example of a portable storage device. (1)
- 4.2 **The motherboard allows for different components to be connected to it and it allows all the parts of a computer to communicate with each other.**
- 4.2.1 Explain what the CPU is. (1)
- 4.2.2 What do we call the socket that the CPU plugs into? (1)
- 4.2.3 RAM is volatile. What does this mean? (1)
- 4.3 **Software manages and controls hardware.**
- 4.3.1 Describe the TWO main categories of software and give an example of each. (4)
- 4.3.2 **An operating system is the first program that is loaded when a computer is booting up.**
- a.) Explain what an operating system is. (1)
- b.) Give ONE example of a mobile operating system and ONE example of a desktop operating system. (2)
- c.) Describe any THREE functions of an operating system. (3)
- 4.3.3 **Software can be distributed in different ways.**
- a.) Differentiate between open source software and proprietary software. (2)
- b.) Tabulate TWO advantages and disadvantages of open source software. (4)
- 4.3.4 Explain what utility software is and give TWO examples. (3)
- 4.3.5 What is the purpose of a device driver? (1)

TOTAL: SECTION B [35]

SECTION C - DATA AND INFORMATION MANAGEMENT**QUESTION 5:****5.1 All data in the computer is represented by 0's and 1's.**

5.1.1 A byte is formed by bits. How many bits make up one byte? (1)

5.1.2 If a file is 6 800 000 bytes. What would be the approximate size of the file in MB? (1)

5.1.3 Give ONE example of a primitive data type. (1)

5.1.4 Convert each of the following as indicated:

a.) $215 \rightarrow$ decimal to binary (3)

b.) $D15_{16} \rightarrow$ hexadecimal to decimal (3)

5.2 File management is important as it allows any user to easily navigate through the computer and perform tasks using the correct applications.

5.2.1 Give ONE example of an operating system utility we use to manage our files and folders. (1)

5.2.2 A file extension is a set of characters added to the end of a file name.
Explain the significance of file extensions in a computer system. (1)

5.2.3 State an application that would be used to open files with the following file extensions:

a.) .txt (1)

b.) .jpg (1)

5.2.4 Study the file path below and answer the questions that follow:

C:\Files\Work\Information Technology\Grade 10\Worksheet 1.doc

a.) How many folders are there in the file path? (1)

b.) Explain what the letter 'C' represents. (1)

TOTAL: SECTION C [15]

SECTION D - SOLUTION DEVELOPMENT

QUESTION 6:

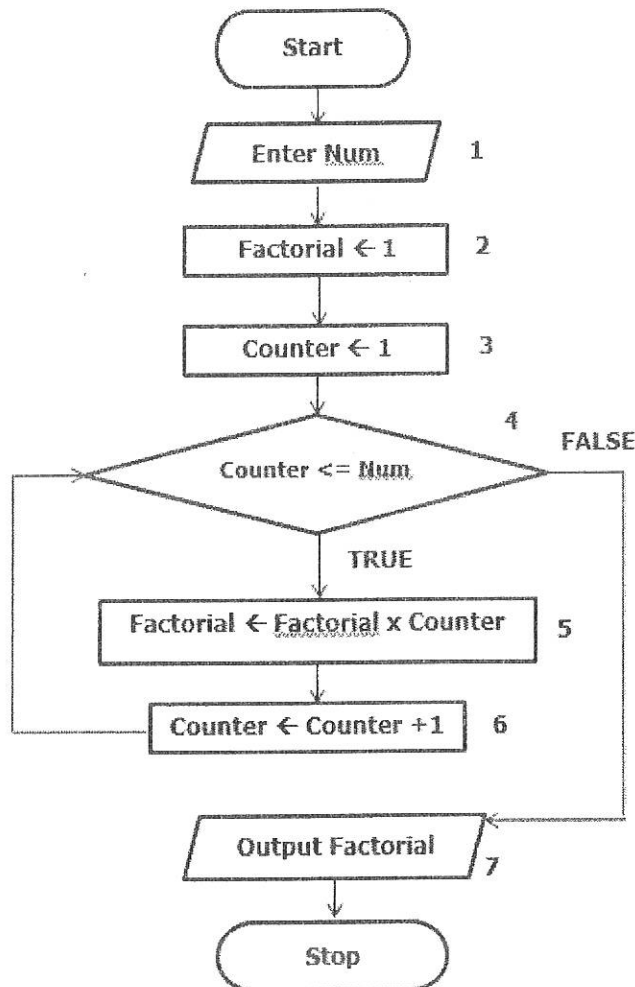
6.1 An algorithm is used in the planning phase of software development.

6.1.1 Explain what an algorithm is and give ONE example of how we can represent them. (2)

6.1.2 Examine the following algorithm and use a **trace table** to determine the output given the following input value: **Num = 5**

N.B. Start your trace table on a new page so that you will have enough space if necessary.

Box No.	Num	Factorial	Counter	Counter <= Num	Output
---------	-----	-----------	---------	----------------	--------



(6)

6.2 Once a program has been coded, the programmer must debug the program.

6.2.1 Explain in simple terms what debugging a program means? **(1)**

6.2.2 Examine the following Delphi code:

```
1 procedure TfrmSolutionDevelopment.btnLargestClick(Sender: TObject);
2   a, b : integer;
3 begin
4   a := InputBox('Input', 'Enter first number:', '0');
5   b = InputBox('Input', 'Enter second number:', '0');
6   if (a > b) then
7     ShowMessage(IntToStr(a) + ' is greater than ' + IntToStr(b));
8   else if (a < b) then
9     ShowMessage(IntToStr(a) + ' is smaller than ' + IntToStr(b))
10  else
11    ShowMessage(IntToStr(a) + ' is equal to ' + StrToInt(b));
12 end;
```

Identify THREE errors in the code and correct them. **(6)**

TOTAL: SECTION D [15]

SECTION E - SOCIAL IMPLICATIONS**QUESTION 7:**

- 7.1 **Sihle purchased a new game and has been playing with it at home with his friends. One of Sihle's friends wants a copy of this game.**
- 7.1.1 Advise Sihle on why it is not a good idea to copy the game for his friend by referring to the concepts of a software license and copyright. (2)
- 7.1.2 What is the term used to describe software that has been illegally copied and distributed? (1)
- 7.2 **Computers allow businesses to be more productive and efficient.**
Give THREE reasons why computer technologies allow a business to operate more efficiently. (3)
- 7.3 **Ray is a security guard at LongDale Mega Market. He is stationed at the control room where he monitors CCTV for the store and compiles daily security reports. He often comes home complaining about pains.**
- 7.3.1 Bring to Ray's attention the concept of ergonomics by explaining to him what it means. (1)
- 7.3.2 Assist Ray by giving him TWO practical ways that he can use to setup his workplace to reduce his pain. (2)
- 7.3.3 Give TWO common-sense, healthy practices that Ray can perform when working for long periods in front of his computer. (2)
- 7.4 **Big J e-Waste is a company owned by a group of environmental activists. They are very passionate about the environment and are constantly looking for ways to educate people about green computing.**
- 7.4.1 Explain what e-waste is. (1)
- 7.4.2 What is meant by the term green computing? (1)
- 7.4.3 They recommend that businesses adopt a paperless office.
Give TWO practical ways in which the amount of paper used for printing can be reduced. (2)

TOTAL: SECTION E [15]**TOTAL: 100 MARKS**