



Province of the  
**EASTERN CAPE**  
EDUCATION

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 11**

**NOVEMBER 2020**

**INFORMATION TECHNOLOGY P 2  
MARKING GUIDELINE**

**MARKS: 150**

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This marking guideline consists of 13 pages.

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**SECTION A: SHORT QUESTIONS****QUESTION 1**

- |     |        |  |     |
|-----|--------|--|-----|
| 1.1 | 1.1.1  | B ✓ – (Low-level programming language) | (1) |
|     | 1.1.2  | A ✓ – (0)                              | (1) |
|     | 1.1.3  | A ✓ – (Process)                        | (1) |
|     | 1.1.4  | B ✓ – (Data verification)              | (1) |
|     | 1.1.5  | C ✓ – (_Discount)                      | (1) |
|     | 1.1.6  | B ✓ – (Data maintenance)               | (1) |
|     | 1.1.7  | B ✓ – (Modulation and Demodulation)    | (1) |
|     | 1.1.8  | C ✓ – (Machine code)                   | (1) |
|     | 1.1.9  | A ✓ – (Acceptable Usage Policy)        | (1) |
|     | 1.1.10 | B ✓ – (Office automation)              | (1) |
| 1.2 | 1.2.1  | Data redundancy ✓                      | (1) |
|     | 1.2.2  | Telecommuting ✓                        | (1) |
|     | 1.2.3  | Anomaly/Anomalies ✓                    | (1) |
|     | 1.2.4  | Constant ✓                             | (1) |
|     | 1.2.5  | Jail breaking ✓                        | (1) |

**TOTAL SECTION A: 15**

**SECTION B: SYSTEM TECHNOLOGIES****QUESTION 2**

- 2.1 2.1.1 Dual Inline Memory Module / DIMM ✓ (1)
- 2.1.2 Volatile memory ✓ (1)
- 2.1.3 DIMM slots/RAM slots ✓ (1)
- 2.1.4 32bit operating system can only see and use 4GB of memory. ✓ (1)
- 2.1.5 Any ONE: ✓
- Loads data and instructions (programs or applications) before the CPU can work with them.
  - Temporarily stores data and instructions (programs or applications) before the CPU can work with them. (1)
- 2.2 Any ONE: ✓✓
- Spec A**
- Windows 10 Pro – Operation system (OS)
  - Kaspersky – Utility software
- Spec B**
- Windows 10 Home – Operating system (OS)
  - ESET – Utility software (2)
- 2.3 2.3.1 8192 GB / 8GB ✓ (1)
- 2.3.2 Double Data Rate ✓ (1)
- 2.4 2.4.1 Intel Core™ i7 9750H ✓ (1)
- 2.4.2 Machine cycle ✓ (1)
- 2.4.3
- Fetching the instructions and data from memory (RAM) ✓
  - Decoding the instructions ✓
  - Executing the instructions ✓
  - Transferring data back to the memory ✓ (4)
- 2.5 2.5.1
- *Built-in video/integrated adapter* is used when doing normal tasks ✓ because it uses much less power and battery life.
  - *Video card* is used by programs that require good graphics. ✓ (2)
- 2.5.2
- Intel RX 5700XT 8GB ✓
  - NVIDIA GTX 1660 4GB ✓ (2)

- 2.6
- Compiler ✓ takes the entire program and translates into machine language. ✓
  - Interpreter ✓ runs one line of a program and the current line is converted into machine language. ✓ (4)
- 2.7 2.7.1 HDMI is an audio/video interface for transferring uncompressed video data, ✓ compressed or uncompressed digital audio from HDMI device to a computer monitor, video projector, digital TV or digital audio device. ✓ (2)
- 2.7.2 High Definition Multimedia Interface ✓ (1)

**TOTAL SECTION B: 26**

**SECTION C: COMMUNICATION AND NETWORK TECHNOLOGIES****QUESTION 3**

- 3.1 3.1.1 Computer network is a collection of computers or other computing devices connected by some sort of communication medium/channel to allow users to share software, hardware, data and information. ✓ (1)
- 3.1.2 Any TWO: ✓✓
- Fast and efficient communication
  - Sharing of hardware resources
  - Centralisation of data
  - Transfer of files
  - Leisure
  - Increased control and security
  - Flexible access (2)
- 3.1.3 Global Area Network (GAN) / World Wide Web (WWW) ✓ (1)
- 3.2 3.2.1 (a) Wi-Fi ✓ NIC (1)
- (b) 3G/4G/LTE/5G ✓ (1)
- 3.2.2 (a) Wi-Fi ✓ NIC (1)
- (b) Ethernet ✓ port (1)
- 3.3 Wi-Fi access point sends and receives radio signals and allows devices to connect to a wired network wirelessly. ✓ (1)
- 3.3.1 Base station ✓ (1)
- 3.3.2
- Hotspot is an area, usually in a public space (such as airport, hotel lobby and restaurant etc), where people may be granted Wi-Fi access from access point to connect wirelessly to the Internet via a wired network. ✓
  - Bandwidth refers to the total amount of data that can be transferred from one point to another in a given period of time. ✓ (2)
- 3.4 3.4.1 Any ONE: ✓
- Skype
  - Google voice
  - Vonage
  - ooVoo
  - Viber
  - Facebook Messenger
  - Jitsi
  - MicoSIP
  - 8\*8
  - EkigaZoiPer (1)

## 3.4.2 Any TWO: ✓✓

- The call quality may be poor if you have a slow Internet connection.
- Your data cap can be used up quickly, especially when using video.
- You need to purchase credits to call telephones that are not on the Internet.
- You need to have an Internet connection and both users need to use the same software.

(2)

- 3.5 3.5.1
- Lossy compression compresses data by losing some of the data / compresses data by sacrificing some insignificant or virtually undetectable portion of the data. ✓
  - Lossless compression compresses data without losing any portion of the data. ✓

(2)

3.5.2 **Lossy compression** (Any ONE): ✓

- Audio
- Video
- Still images

**Lossless compression** (Any ONE): ✓

- Documents
- Spreadsheet
- Databases

(2)

- 3.6 3.6.1
- Fixed location Internet access ✓ refers to high speed data transmission to homes and businesses using cabled technology. ✓
  - Mobile Internet access ✓ refers to the ability to connect to the Internet using wireless networks such as cellular phone network. ✓

(4)

3.6.2 **Fixed Location Internet Access**

- ADSL ✓

**Mobile Internet access** (Any ONE): ✓

- 3G
- 4G/LTE
- 5G

(2)

**TOTAL SECTION C: 25**

**SECTION D: DATA AND INFORMATION MANAGEMENT****QUESTION 4**

4.1 4.1.1 DBMS is a software that allows you to work with electronic databases. ✓ (1)

4.1.2 Any THREE: ✓✓✓

- Creates database
- Edits the structure of the database
- Adds, edits and deletes data in the database
- Queries or searches the data in the database
- Processes the data in the database to extract information (3)

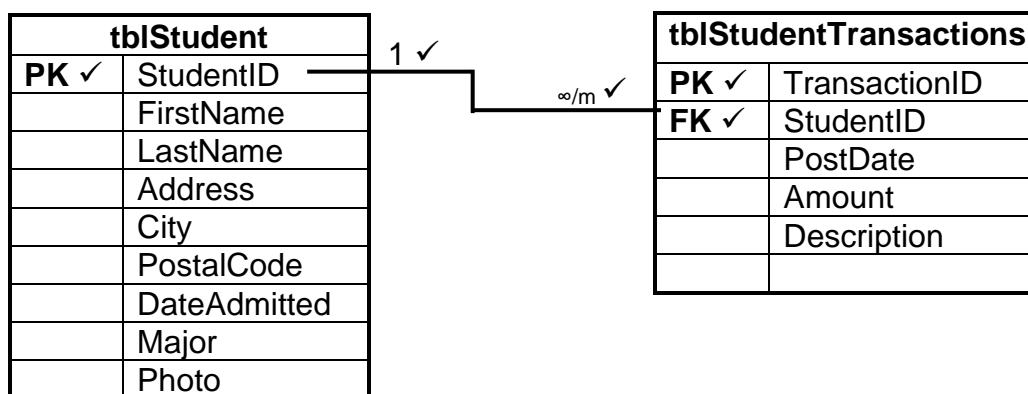
4.1.3 Bigtable ✓ (1)

4.2 4.2.1 Any THREE: ✓✓✓

- Format check
- Data type check
- Range check
- Presence check
- Check digit (3)

- 4.2.2
- Accurate and without errors ✓
  - Verifiable ✓
  - Timely information ✓ (3)

4.3 4.3.1



(5)

- 4.3.2 Composite keys refer to the combination of more than one field to uniquely identify a record. ✓
- Primary key is a field which identifies each record with a unique value. ✓ (2)

## 4.4 Any THREE: ✓✓✓

- Manages and maintains databases
- Controls the allocation and supervision of users of the database and their access rights
- Performs routine maintenance on the database
- Ensures the DB software is updated regularly
- Implementing a good backup policy
- Installing and configuring software on additional servers
- Ensuring systems have enough storage and memory

(3)

**TOTAL SECTION D: 21**



**SECTION E: SOLUTION DEVELOPMENT****QUESTION 5**

- 5.1 5.1.1 American Standard Code for Information Interchange / ASCII ✓ (1)
- 5.1.2 CSV/Comma delimited ✓ (1)
- 5.1.3 (a) AssignFile(txtStock, 'Goods.txt) – Links file variable (txtStock) to the file on the disk (Goods.txt). ✓ (1)
- (b) Append(txtStock) – opens an existing file to write to, ✓ the file pointer is positioned at the end of the file and the new data is added to the end of the file. ✓ (2)
- 5.2 Step-and-Watch ✓ (1)
- 5.3 Data persistence refers to the ability of data to be retrieved and used more than once after it has been saved. ✓ (1)
- 5.4 5.4.1 Format function is used to convert the real values to strings of equal length, ✓ with leading spaces added. (1)
- 5.4.2 (a) • % – this indicates that the text which follows is formatting instructions and not normal text ✓  
• 10 – shows that the final string must contain 10 characters ✓  
• 2 – shows that the final string must contain 2 decimal points/values ✓  
• f – shows that the value being passed in the second parameter is a floating-point value ✓  
• rWeight – holds the information that needs to be converted into a formatted string ✓ (5)
- (b) m, ✓ monetary ✓ (2)
- 5.5 • Selection sort is a sorting algorithm that uses two For loops to sort a list, by moving the smallest or largest element to the top of the list. ✓  
• Bubble sort is a sorting algorithm that bubbles the smallest or largest element to the bottom of the list by using Boolean flag and a For loop. ✓ (2)

5.6

Line No	Value1	Value2	Value3	Value4	Screen Output
1			10 ✓		
2	5 ✓				
3		7 ✓			
4				10.6 ✓	
5		2 ✓			
6	5 ✓				
7					5 ✓
8					2 ✓
9					10 ✓
10					10.6 ✓

(5)

5.7

- Readln will read a line of text from the file buffer/variable text file and place it into the string variable. ✓
- Writeln will write a line of text to the buffer area/variable text file ✓ and add an EOLn character to the line of text.

(2)

**TOTAL SECTION D: 24**

**SECTION F: INTEGRATED SCENARIO****QUESTION 6**

- 6.1 6.1.1 Ant THREE examples: ✓✓✓
- Better record keeping or data storage and management
  - Better communication and virtual presence
  - Automation
  - Artificial Intelligence and sensor driven computing (3)
- 6.1.2 Any TWO: ✓✓
- Musicians now record an album with greater ease and lower cost than ever before.
  - Well-known musicians have released albums created entirely on iPads.
  - Musicians distribute their work directly without the aid of a studio.
  - IT gives them many ways to market themselves.
  - Customers can buy/ download music via Internet. (2)
- 6.1.3
- Workplace – is wherever work takes place/any place where people work. ✓
  - Employment practices – refer to how people are employed, ✓ for how long, how they are paid, where and when they are expected to work. (2)
- 6.1.4 Outsourcing occurs when contracting a specialist business to run aspects of your own business that are essential for proper functioning, ✓ but that do not fall within your area of expertise. ✓ (2)
- 6.2 6.2.1 Settings in server operating system ✓ (1)
- 6.2.2 Any THREE aspects: ✓✓✓
- A code of conduct educating users and governing their behaviour when using the network and the Internet.
  - Details on when and where portable storage devices such as flash disks and portable media players may be used.
  - Details of restrictions about installing any hardware or software.
  - Procedures to follow if users become the victims of identity theft, malware, cyber bullying and/or cyber stalking.
  - Hints on how to avoid plagiarism and breaking copyright law.
  - Clear consequences of violating conditions spelt out in the AUP. (3)
- 6.2.3 Restrictions ✓ (1)

- 6.3 6.3.1 Any THREE: ✓✓✓
- Better communication
  - More efficient administration
  - Census and statistics
  - Elections
  - Weather services and predictions
- (3)
- 6.3.2 Any THREE: ✓✓✓
- Insufficient knowledge of and exposure to ICT.
  - ICT exposes them to risks that they cannot manage.
  - Abuse of ICT by criminal elements through activities such as hacking, cybercrime.
  - Malware increases people's fear of ICT and limits implementation and adoption of ICT projects.
- (3)
- 6.4 6.4.1 Globalisation is the integration of economies, cultures, ideas and groups across the globe ✓ driven by a world-wide network of communication, transport, trade and immigration. ✓
- OR**
- Globalisation is a process of connection, interaction and integration among people, companies, and governments. ✓✓
- (2)
- 6.4.2 Any THREE: ✓✓✓
- An efficient market where there is an equilibrium between what buyers are willing to pay for a good or service and what sellers are willing to sell a good or service for.
  - Increased competition between companies which improves the service and quality of goods or services delivered to the consumers.
  - Security as countries' economies are intertwined and dependent on each other.
  - Wealth equality throughout the world as poorer nations have more job opportunities.
- (3)
- 6.4.3
- Agricultural sector: ✓ AI-powered machine vision systems can measure crop populations and detect weeds or plant pests and use robotic sprayers to precisely apply herbicides. ✓
  - Healthcare sector: ✓ Precision medicine helps doctors analyse a patient's genome sequence, medical history, and lifestyle, making a diagnosis more reliable. ✓
- (4)
- 6.5 6.5.1 Any THREE: ✓✓✓
- Accidentally deleting files or reformatting a disk.
  - Not ensuring that regular backups are made.
  - Entering incorrect data in a program.
  - Losing or misplacing portable storage devices.
  - Allowing other unauthorised users to get access to data by not following security principles (such as having secure password and changing it on a regular basis.)
- (3)

## 6.5.2 Any THREE: ✓✓✓

- You need to back up data.
- Automate or schedule the running of the backup software so that you do not forget to run the backup process.
- Back up your files on an external storage device such as portable hard drive.
- Keep the backups off-site in case of theft or a disaster such as fire.
- Perform housekeeping so that you do not have multiple copies or versions of the same files on your computer.
- Consider archiving large files that you seldom use by moving them off your computer to an external hard drive.
- Check from time to time that the backups are actually working by restoring some of the files from backups.

(3)

## 6.6 Any THREE: ✓✓✓

- Minimising user input
- Format checks
- Data type checks
- Range checks
- Presence check

(3)

## 6.7 Mandatory fields are specific fields that are compulsory and need to be filled in. ✓

(1)

**TOTAL SECTION F: 39**  
**GRAND TOTAL: 150**