



Province of the  
**EASTERN CAPE**  
EDUCATION

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 11**

**NOVEMBER 2019**

**INFORMATION TECHNOLOGY P2  
MARKING GUIDELINE**

**MARKS: 150**

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This marking guideline consists of 10 pages.

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**SECTION A: MULTIPLE-CHOICE QUESTIONS****QUESTION 1**

- 1.1 1.1.1 A ✓ – Interpreter (1)
- 1.1.2 B ✓ – All computers are released with a separate video card (1)
- 1.1.3 C ✓ – 2 (1)
- 1.1.4 D ✓ – Mobile office (1)
- 1.1.5 B ✓ – Punctuality (1)
- 1.1.6 C ✓ – Designed for client side only (1)
- 1.1.7 D ✓ – POST (1)
- 1.1.8 C ✓ – a programming error (1)
- 1.1.9 D ✓ – Long Term Evolution (1)
- 1.1.10 C ✓ – 4 (1)
- 1.2 1.2.1 Field ✓ (1)
- 1.2.2 Composite key / Concatenated key ✓ (1)
- 1.2.3 Crowd funding ✓ (1)
- 1.2.4 Trace table ✓ (1)
- 1.2.5 Thunderbolt ✓ (1)

**TOTAL SECTION A: 15**

**SECTION B: SYSTEMS TECHNOLOGIES****QUESTION 2**

- 2.1 2.1.1 ZIF socket (Zero Insertion Force socket) ✓ (1)
- 2.1.2 (a) Expansion slots are used to add extra circuits ✓ to the motherboard. (1)
- (b) Any TWO ✓✓
- Video/Graphics card
  - Sound card
  - Network card (2)
- (c) USB/Firewire/HDMI, ✓ Wireless ✓ (2)
- 2.2 2.2.1 Point-to-point connection means that the wires or paths used to transfer data are not shared between multiple components. (1)
- 2.2.2 Your operating system could be 32 bit operating system that can only recognise 4GB of memory. (1)
- 2.2.3 This is to reduce the distance that the data needs to travel. (1)
- 2.2.4 Any THREE ✓✓✓
- RAM is:
- electronic
  - fast
  - volatile
  - expensive
  - limited (3)
- 2.2.5 EEPROM ✓ (1)
- 2.3 2.3.1 Any FOUR ✓✓✓✓
- Unauthorised access to data
  - Malware threats to networks
  - Human issues
  - Natural disasters
  - Hardware and software issues (4)
- 2.3.2 Any ONE of ✓ listing ✓ explanation
- Phishing* refers to fishing for information by fooling a user into giving out confidential data such as passwords and then using these details to impersonate (pose as) the user and commit identity theft.
- Spoofing* refers to techniques used to make electronic communication (via e-mail or cellphone) appear to originate from a legitimate person or institution. (2)
- 2.4 2.4.1 (a) Android ✓ (1)
- (b) Linux ✓ (1)
- 2.4.2 Tablets that use ARM ✓ instead of Intel processors, but that still run Windows. (1)
- 2.4.3 iOS ✓ (1)

**TOTAL SECTION B: 23**

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

- 3.1 3.1.1 *Communication channel* is a path/way which carries/transport signal from the sending device to the receiving device in a network. ✓ (1)
- 3.1.1 Wired/Cabled ✓  
Wireless ✓ (2)
- 3.1.2 Any THREE ✓✓✓
  - *Eavesdropping* – makes it possible for someone to detect a signal on a cable without piercing the cable to gain access to the data.
  - *Electromagnetic Interference (EMI)* – refers to an electronic signal that interferes with normal network transmission.
  - *Crosstalk* – refers to magnetic fields in two wires that are close to one another can interfere with transmission.
  - *Attenuation* – refers to the loss of signal strength over a distance. (3)
- 3.2 3.2.1 A NIC is used to encode or 'convert' the data so that the data can be transmitted over a specific medium. ✓  
NIC receives data/signals and decodes the data so that it can be understood by the computer. ✓ (2)
- 3.2.2 FALSE ✓ (1)
- 3.2.3
  - 802.11n. ✓
  - 802.11g – 10 Mbps ✓
  - 802.11n – 50 Mbps ✓ (3)
- 3.3 3.3.1 VoIP is a protocol that allows telephone/voice calls ✓ to be made over LANs, WANs and the Internet. ✓ (2)
- 3.3.2 Any TWO ✓✓
  - VoIP calls are cheaper than normal telephone calls
  - The software is free
  - VoIP allows you to transfer files, as well as make video conference calls. (2)
- 3.4 3.4.1 Topology refers to the physical layout and connection of computers in a network. ✓ (1)
- 3.4.2 Any TWO ✓✓
  - In a star topology, every device is connected via its own cable to a central device such as switch.
  - A switch controls the traffic in the network.
  - If a single cable breaks, only that one device will be affected and the network will not be affected. (2)

- 3.5 3.5.1 *Static website* consists of multiple pages, each a single file that displays exactly the same information every time to the user ✓ just as it was created **while** *Dynamic website* is a website consisting of web pages designed to be generated on the go and which may differ each time, ✓ based on who the user is and what their recorded preferences and options are. (2)
- 3.5.2 Any TWO ✓✓
- Relatively simple to design
  - Does not need as much server power
  - Designed for client side only
  - Can be interactive
  - Great for pages that are not customisable or do not need frequent updating (2)
- 3.5.3 (a) Any ONE ✓  
.htm  
.html (1)
- (b) Any ONE ✓  
.php  
.asp  
.jsp (1)

**TOTAL SECTION C: 25**

## SECTION D: DATA AND INFORMATION MANAGEMENT

### QUESTION 4

4.1 4.1.1 *Database* is a collection of data or facts regarding a specific topic. ✓ (1)

4.1.2 (a) *Distributed database* is a system where parts of a database are spread across servers in separate locations. ✓  
*Centralised database* is a database where software is installed on a server and is never directly accessed by the user. ✓ (2)

(b) Any TWO ✓✓  
 • Slow network traffic because of large volume of data being communicated  
 • High data charges because of large volume of data being communicated  
 • The risk of the entire business shutdown if there are problems with the central database or communication network (2)

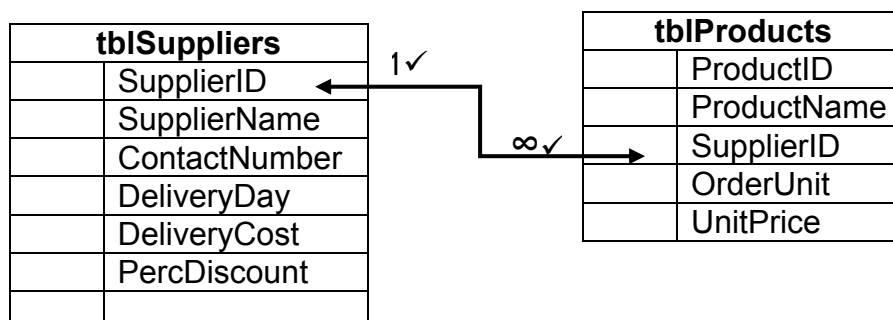
(c) Multiple servers, systems and ways to access the database is managed in different locations and the systems are open to a higher level of risk and security is needed to manage the different servers. ✓ (1)

4.2 4.2.1 • It receives messages from client software over network telling it what to do ✓  
 • The instructions are in the form of text strings containing SQL commands ✓  
 • The server interprets the instructions and attempts to carry it out (execute it) ✓  
 • It then sends the results back to the client ✓ (4)

4.2.2 Transactions ✓ (1)

4.3 Any THREE ✓✓✓  
 • Controlling network user access rights and security  
 • Ensuring access to data spread across networked storage devices  
 • Creating and implementing a backup strategy  
 • Making sure that the operating system is running to ensure the fastest possible communication. (3)

4.4 4.4.1



(2)

4.4.2



- Two marks for entities (tblSuppliers ✓ and tblProducts ✓)
- One Mark for **Crow foot** relationships which is **1: M.** ✓
- One mark for the concept **delivers** ✓

(4)

4.5 4.5.1 Anomaly or Anomalies ✓ (1)

- 4.5.2 Insert anomaly – occurs when the database prevents the user from capturing data when they want or need it. ✓
- Delete anomaly – occurs when deleting one record results in the simultaneous removal/deletion of other, unrelated records ✓
- Update anomaly – occurs when an item of data or a record changes and has to be changed/alterd in multiple records in the table. ✓

(3)

**TOTAL SECTION D: 24**

## SECTION E: SOLUTION DEVELOPMENT

### QUESTION 5

- 5.1 5.1.1 Comma Separated Values ✓ (1)
- 5.1.2 (a) Reset(txtFile) – opens a variable textfile and positions a pointer/cursor at the beginning of a variable textfile. ✓ (1)
- (b) Rewrite(txtFile) – replaces/overwrites the current contents of a variable textfile. ✓ (1)
- 5.2
- Syntax error ✓
  - Logical error ✓
  - Run-time error ✓ (3)
- 5.3 5.3.1
- Method scope ✓ – refers to variables declared in an event handler and only accessed by the specific event handler. ✓
  - Class scope ✓ – variables declared as a private variable or public variable and can be accessed by all event handlers of a class. ✓
  - Unit scope ✓ – constants or variables in the **implementation** section of the unit and can be accessed by all event handlers in the same unit. ✓ (6)
- 5.3.2 *Local duration* refers to a variable that is declared in an event handler; it is created when the event handler executes and is destroyed when the event handler is done being executed. ✓
- Static duration* refers to variable that is declared as a public/private variable of the class of a form, it will exist all the time while the program is running. ✓ (2)
- 5.4 5.4.1 4 ✓ (1)
- 5.4.2 18 ✓ (1)
- 5.4.3 love ✓ (1)
- 5.4.4 2 ✓ (1)
- 5.4.5 love pro ✓ (1)
- 5.5 *Elements* refer to a group of data items/values stored/found in an array. ✓
- Index* refers to an ordinal value indicating the position of an element in an array. ✓ (2)
- 5.6
- Reading data from textfiles. ✓
  - Input from the user via input components. ✓
  - Assigning values as part of the declaration of an array/ (constants array) ✓
  - Assigning fixed values through programming code //(On Create or on Form Activate) ✓ (4)

**TOTAL SECTION E: 25**



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

- 6.1 6.1.1
- Education and training ✓
  - Stable supporting infrastructure ✓
  - Pricing and availability of hardware and software ✓
- (3)
- 6.1.2 Any THREE ✓✓✓
- Fear of ICT
  - Poorly written and designed software systems
  - Limiting government policies
  - Poor supporting infrastructure
  - Availability of skilled people
  - Profitability
  - Information overload and the need to verify information
- (3)
- 6.1.3 *Restrictions* refer to limiting user activity ✓ and controlling access by changing settings in the software and hardware. ✓
- (2)
- 6.1.4
- Monitors and control the communication that takes place between a network or computer and wider network such as internet ✓
  - Prevents users from accessing certain addresses/websites or using certain protocols ✓
- (2)
- 6.2 *Robotics* – performance of physical tasks, commonly repetitive or dangerous ones by computer-controlled machines rather than human beings. ✓  
*Office automation* – process where certain office processes are carried out without human intervention. ✓
- (2)
- 6.3 Any THREE ✓✓✓
- Creates and manages user accounts
  - Controls access to hardware and storage
  - Implements backup policy
  - Installs and updates software
  - Administers network security like firewalls and anti-virus software.
- (3)
- 6.4
- Policies, restrictions and firewalls ✓
  - End-user AUP (Acceptable Use Policy) ✓
- (2)
- 6.5 6.5.1 Any THREE ✓✓✓
- People communicate at high speed on a global scale
  - People compete for resources on a global scale
  - Jobs are easily outsourced across international boundaries
  - Telecommuting
  - The flow of information is difficult to control or restrict
- (3)

- 6.5.2 (a) *Online banking* – the ability to connect to your bank via the Internet and perform online transactions. ✓ (1)
- (b) *E-learning* – refers to the use of ICT and electronic media to learn. ✓ (1)
- 6.6 6.6.1 DNS is an Internet service that translates domain names to IP addresses. ✓ (1)
- 6.6.2 ICANN / Internet Corporation for Names and Numbers ✓ (1)
- 6.6.3 DNS poisoning involves gaining access to and changing data ✓ in the database of a DNS server. ✓ (2)
- 6.7 6.7.1 *Digital certificate* is used to confirm the website is what it claims to be. ✓ (1)
- 6.7.2 12 months or a year ✓ (1)
- 6.8 6.8.1 Any FOUR ✓✓✓✓ (4)
- 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 unauthorised users to get access to data by not following basic security principles
- 6.8.2 *Disk imaging* – creating a backup image of the entire hard drive including all data, programs and to be used for re-installation ✓ in case of complete hard drive failure. ✓ (2)
- 6.8.3
- UPS helps to protect hardware against power surges and spikes which can damage it. ✓
  - The UPS keeps the battery charged and when the power fails, switches the computer over to use the battery, allowing it to work for a while. ✓ (2)
- 6.9 Any TWO ✓✓ (2)
- Free/limited storage space online
  - Synchronising data files across all your devices to make sure you always have the latest versions of files.
  - Sharing files with other users
  - Able to access files wherever you have Internet connection

**TOTAL SECTION F: 38**  
**GRAND TOTAL: 150**