



Province of the
EASTERN CAPE
EDUCATION



**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2022

**INFORMATION TECHNOLOGY P2
MARKING GUIDELINE
(EXEMPLAR)**

MARKS: 150

This marking guideline consists of 12 pages.

SECTION A: SHORT QUESTIONS**QUESTION 1**

- | | | | |
|-----|--------|--------------------------------|-----|
| 1.1 | 1.1.1 | B ✓ – (Globalisation) | (1) |
| | 1.1.2 | C ✓ – (Information Systems/IS) | (1) |
| | 1.1.3 | B ✓ – (Anomaly) | (1) |
| | 1.1.4 | B ✓ – (Tables) | (1) |
| | 1.1.5 | D ✓ – (Codec) | (1) |
| 1.2 | 1.2.1 | D ✓ – (Utilities) | (1) |
| | 1.2.2 | B ✓ – (Driver) | (1) |
| | 1.2.3 | A ✓ – (RAM) | (1) |
| | 1.2.4 | F ✓ – (Mandatory fields) | (1) |
| | 1.2.5 | G ✓ – (Thread) | (1) |
| | 1.2.6 | E ✓ – (Social media) | (1) |
| | 1.2.7 | I ✓ – (CamelCase) | (1) |
| | 1.2.8 | H ✓ – (Casting/Typecasting) | (1) |
| | 1.2.9 | J ✓ – (Delimiters) | (1) |
| | 1.2.10 | K ✓ – (Obfuscated) | (1) |

TOTAL SECTION A: 15

SECTION B: SYSTEM TECHNOLOGIES**QUESTION 2**

- 2.1 2.1.1 Any ONE: ✓
- Machine code refers to instructions in binary format (0's and 1's) that the CPU can directly execute.
 - Machine code refers to the instructions delivered directly to your CPU and is written in binary or hexadecimal notation. (1)
- 2.1.2
- Low level programming languages ✓
 - High level programming languages ✓ (2)
- 2.1.3 Executable ✓ (1)
- 2.1.4 Application Programming Interface ✓ (1)
- 2.2 2.2.1
- Multitasking ✓ – is the ability of the operating system/OS to quickly switch between many computing tasks to give the impression the different applications are executing simultaneously.

OR

A single processor splits its time between different processes. ✓

- Multiprocessing ✓ – refers to the use of more than one CPU within a single computer system.

OR

Multiprocessing uses many processors to complete tasks. ✓

- Multithreading ✓ – refers to operations within a single application is divided into threads, each of the threads can run parallel and the OS divides its processing time among each thread within the application. ✓

OR

Multithreading completes the instructions for multiple different tasks inside the same program (called threads) by quickly switching between them. (6)

- 2.2.2 Process ✓ (1)
- 2.2.3 Core ✓ (1)
- 2.3 2.3.1 Virtualisation refers to running multiple computing environments (called virtual machines) on a single set of hardware. ✓ (1)

- 2.3.2 Any THREE: ✓✓✓
- Virtual machines allow users to install operating systems/open source operating systems without interfering with your computer.
 - Virtual machines can be used to install an application that might contain a virus / test if an application contains a virus and delete the entire virtual machine if the application has a virus.
 - The image of the virtual machine can be used to back up your computer or transfer all your data to a new computer.
 - Virtual machines enable mobile developers to develop applications for different versions of OS without having to own hundreds of different devices. (3)
- 2.4 2.4.1 Caching refers to a small, temporary form of storage that is created so that the data stored in the cache can be accessed more quickly. ✓ (1)
- 2.4.2
- CPU cache ✓
 - Disk cache ✓
 - Web cache ✓ (3)
- 2.5 2.5.1 Any ONE: ✓
- Circuit board
 - Main board
 - System board (1)
- 2.5.2 Motherboard bus is a path/way connecting different components of a computing device. ✓ (1)
- 2.5.3
- Internal bus ✓
 - External/Expansion bus ✓ (2)
- 2.5.4 (a) Zero Insertion Force/ZIF ✓ (1)
- (b) DIMM slot ✓ (1)
- TOTAL SECTION B: 27**

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

- 3.1 3.1.1 • Wired/Cabled ✓ communication medium – uses physical media/cables to transfer data. ✓
○ Any ONE example: ✓
▪ Twisted pair cables/Unshielded Twisted Pair/UTP
▪ Fibre optic cables/Under-sea cables
- Wireless ✓ communication medium – uses wireless technology/radio waves rather than cables to transfer data. ✓
○ Any ONE example: ✓
▪ Satellites
▪ Microwave stations (6)
- 3.1.2 Node ✓ (1)
- 3.2 3.2.1 Any ONE: ✓
• Network topology refers to the layout/shape/structure of computing devices in a communication network.
• Network topology refers to the layout of the physical connection of computing devices in a network. (1)
- 3.2.2 Any TWO: ✓✓
• They are easy to install and maintain.
• Computing devices can be added and removed from the network with little or no disruption to the network.
• If any connected device breaks/malfunctions, it does not affect the rest of the network. (2)
- 3.2.3 Any ONE: ✓
• If the switch/hub/server fails then the entire network is down or becomes unusable.
• If the switch/hub/server fails, the entire network is inoperable until the device is repaired/replaced. (1)
- 3.2.4 Any ONE: ✓
• Switch has the ability to direct network traffic to the correct port.
• Switch directs the traffic between devices connected to the network. (1)
- 3.2.5 Hub ✓ (1)
- 3.3 Any TWO: ✓✓
• Network printers
• Network storage
• Shared folders
• Network applications
• Internet connection (2)

- 3.4 3.4.1 (a) Social media is a form of electronic communication through which users create online communities to share information, ideas, personal messages and other content. ✓ (1)
- (b) Influencers – people who have built a reputation for their knowledge and expertise on a particular field/topic. ✓ (1)
- 3.4.2 Any TWO: ✓✓
- Show people on the internet the same respect you would show to them in person.
 - Do not say things to people you would not say to them in person.
 - Do not post things on the internet that you would not want your mother or future boss to see.
 - Things posted on the internet often last forever. This means that things you post as a teenager or young adult can negatively affect the rest of your life.
 - Make sure your messages are clearly written and easy to understand.
 - When joining an existing conversation, speak about subjects relevant to the topic.
 - Try to make useful contributions and help people out on the internet.
 - If you need help from the internet, do not expect other people to do all the work for you. Do as much work as you can before asking your question.
 - See if there are existing conversations about your topic before starting new conversations.
 - Do not spam people! Do not post the same advertisement repeatedly. (2)
- 3.4.3 Spam ✓ (1)
- 3.5
- Static ✓ websites – websites where the information is coded directly into the website and displays exactly the same information every time to the user just as when it was created. ✓
 - Dynamic ✓ websites – the information displayed on the website is stored in a database and is dynamically loaded onto pages based on the user's request. ✓ (4)

TOTAL SECTION C: 24

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

- 4.1 4.1.1 Any ONE: ✓
- Database is a collection of data organised in a manner that allows access, retrieval and use of data.
 - Database is an electronic system that allows data to be easily stored, organised, processed and changed.
 - Database is a collection of data or facts regarding a specific topic. (1)
- 4.1.2
- Desktop database ✓ is a small database that is only being accessed by a single user on a single computer. ✓
 - Server database ✓ is stored on a dedicated server that is connected to the network/internet so that multiple users from multiple locations can access the database. ✓ (4)
- 4.1.3
- Size ✓
 - Accessibility ✓ (2)
- 4.1.4 Any ONE explanation: ✓
- Distributed databases are databases that are not stored and run from a single computer (or server), but instead are stored on multiple computers at different locations.
 - Databases that are stored in multiple computers, located in the same physical location or dispersed over a network of interconnected computers.
 - Distributed databases are systems where parts of the database (the data and the DBMS) are spread across servers in separate locations. (1)
- 4.1.5 Any TWO: ✓✓
- Slow network traffic because large volumes of data being communicated
 - High data charges because of large volumes of data being communicated.
 - The risk of the entire business shutting down if there are problems with central database or the communication network. (2)
- 4.2 Any THREE: ✓ ✓ ✓
- Create database and database structures
 - Develop database queries
 - Optimise database performance
 - Responsible for data integrity in a database
 - Maintain data security in a database (3)

4.3 Any THREE: ✓ ✓ ✓

- Accuracy/Accurate
- Correctness/Correct
- Currently/Current
- Completeness/Complete
- Consistency/Consistent
- Relevance/Relevant

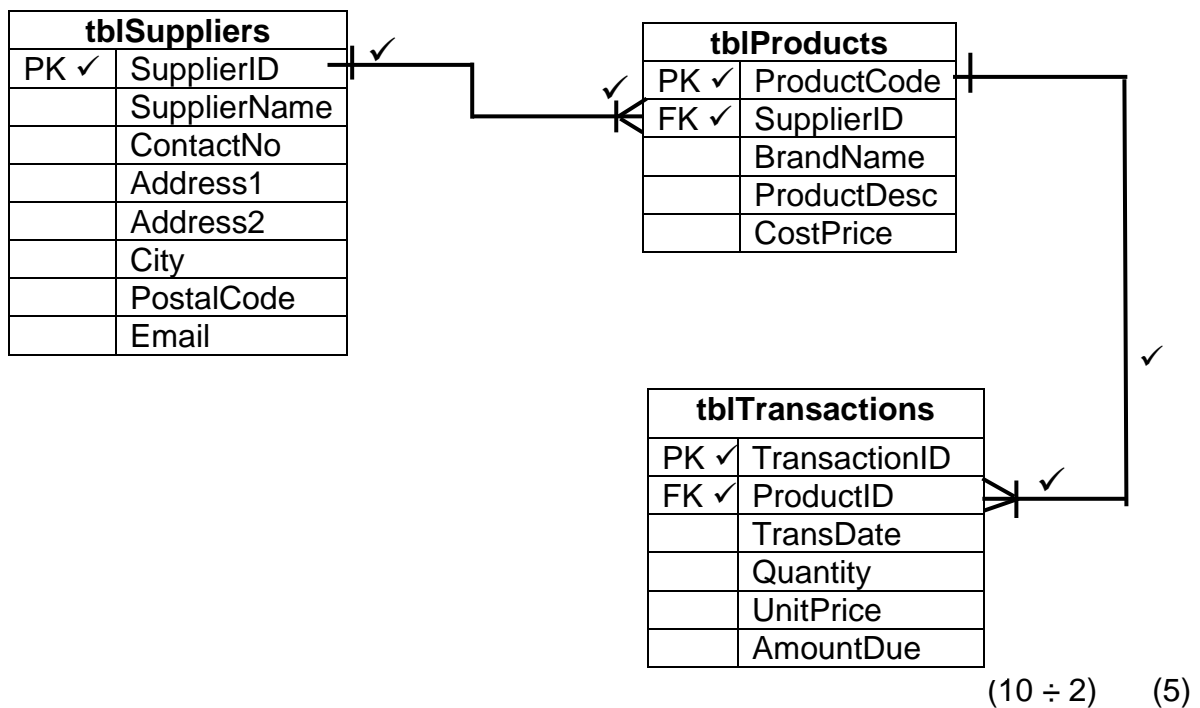
(3)

4.4 Any ONE: ✓

- Data validation is a technique used to reduce the number of errors that can be made during the input of data.
- Data validation refers to the process in which you check whether the data is accurate, in the correct format or of the correct type before recording it in your database.

(1)

4.5 4.5.1



4.5.2 Text/Short text ✓

(1)

TOTAL SECTION D: 23

SECTION E: SOLUTION DEVELOPMENT**QUESTION 5**

- 5.1 5.1.1 • Physical file name refers to the external filename found on a storage device and contains the actual data. ✓
 • Logical file is a variable (in RAM) that points to the physical file on your storage medium. ✓ (2)
- 5.2 5.2.1 • Syntax error ✓
 • Logic error ✓
 • Runtime error ✓ (3)
- 5.2.2 Exception ✓ (1)
- 5.2.3 Exception handling ✓ (1)
- 5.3 5.3.1 Any ONE: ✓
 • Array is a data structure which stores values or data items of the same type under one name.
 • Array is a data structure that stores a set value (elements) of the same type linked to a single variable name (1)
- 5.3.2 • One-dimensional/1 D array ✓ contains only one row for storing data. ✓
 • Two dimensional/2D array ✓ displays the values on an array in tabular format. ✓ (4)
- 5.3.3 (a) arrMarks: array [1.6] of Integer; ✓ also
 • accept if learner declares a constant array (1)
- (b) arrMarks[5]; ✓
 • accept any index which coincides with the answer provided in 5.3.3 (a) (1)
- (c) Subscript ✓ (1)
- (d) Elements ✓ (1)
- 5.3.4 • Constant ✓
 • Variable ✓
 • Type ✓ (3)
- 5.4 5.4.1 'Dwelling in the ' (1)
- 5.4.2 'Dwelling in the 4th IR' (1)
- 5.4.3 'Dwelling in the ' (1)

TOTAL SECTION D: 22

SECTION F: INTEGRATED SCENARIO**QUESTION 6**

- 6.1 6.1.1 Any THREE: ✓✓✓
- Online banking
 - E-learning
 - Booking reservations
 - Video conferencing
 - Social websites
- (3)
- 6.1.2
- Analysis from big data can be used by businesses to discriminate against consumers when they are being analysed and assessed in greater detail. ✓
 - Companies also capture big data on consumer habits for targeted marketing. ✓
 - As big data increases, it exposes more of our data to potential security breaches. ✓
- (3)
- 6.2
- Mobile office is a concept whereby the tools of your business are carried around with you, allowing you to perform common office functions while on the move. ✓
 - Virtual office is a fixed physical address containing minimal office setup such as reception desk and meeting room, which is used as a shared space by people who otherwise work from a mobile office. ✓
- (2)
- 6.3 6.3.1 Any ONE: ✓
- Privacy is the ability to control how information about them is shared with other people or institutions.
 - Privacy is defined as a person's ability to control how the information about them is shared with other people or institutions.
- (1)
- 6.3.2
- Protection Of Personal Information. ✓
 - It ensures that citizens' personal information (such as ID numbers, addresses and telephone numbers) may only be used in very specific circumstances. ✓
- (2)
- 6.3.3 Any THREE: ✓✓✓
- Exclude personal information from your social media profiles, like your phone number, address, family information or school.
 - Look at your social media privacy settings
 - Protect your online passwords and strengthen them.
 - Use multiple passwords
 - Check your phone's privacy settings.
 - Be aware of 'phishing' e-mails
 - Check for any suspicious transactions that you did not authorise.
- (3)

- 6.4
- Inaccurate and invalid data input ✓
 - Unverified data ✓
 - Software bugs ✓
 - Incorrect hardware/software configurations ✓
- (4)
- 6.5 6.5.1 Any ONE: ✓
- Location-based computing/services are applications that use the position of a device and its user in the provision of a value-added service.
 - Location-based computing/services are services that use software applications together with the location, based databases to deliver a service
- (1)
- 6.5.2 Any TWO: ✓✓
- Loss of personal privacy.
 - Increased the risks of stalking and domestic violence because perpetrators are able to use or abuse location-based services to gain access to location information about their victims.
 - LBCs make it easy for predators to locate potential victims and they give the criminal more than enough information to manipulate their target.
 - An increasing number of minors carry location-enabled cellphones and devices, location privacy will also become a child safety issue.
- (2)
- 6.5.3 Any THREE: ✓✓✓
- Foursquare
 - Dark sky
 - Pokemon Go
 - Curbside
 - Target
 - Gas buddy
 - Uber
 - Weather apps
 - Food ordering apps
 - Car sharing services
 - Tinder
 - Meetup
 - Windy
 - Google maps
- (3)

- 6.6 Any THREE: ✓✓✓
- Computers perform tasks very fast. Some CPUs can execute literally billions of instructions per second.
 - If programmed properly, computers are capable of performing the same tasks 100% accurately every time.
 - Computers are able to perform many tasks at the same time.
 - Computers will carry out boring and repetitive tasks accurately.
 - Computers can be joined together (either as a LAN or a WAN) and this allows them to easily share resources such as printers and data.
 - Computer databases can store enormous amounts of data including text, numbers, images and videos.
 - Computers can search for stored data extremely fast.
 - Data can be secured with passwords or encryption. (3)
- 6.7
- HTTP (Hypertext Transfer Protocol) is the protocol that controls how web pages are sent from a web server to a user's web browser OR it helps to transfer information like document, file, image, video between computers over internet. ✓
 - HTTPS (Hypertext Transfer Protocol Secure) is a secure version of HTTP in which data is encrypted before it is transferred. ✓ (2)
- 6.8 One Time Password or One Time Pin ✓ (1)
- 6.9 Any THREE: ✓✓✓
- Designing the layout of web pages
 - Identifying features for the website
 - Designing the look and feel of the website
 - Coding the website (3)
- 6.10 6.10.1 Backup is the process of making copies of your computer's data to use in the event that the original data or is lost or destroyed. ✓ (1)
- 6.10.2
- Full backup ✓
 - Incremental backup ✓
 - Differential backup ✓ (3)
- 6.10.3 Any TWO: ✓✓
- Local backup
 - Offsite backup
 - Online/cloud backup (2)

TOTAL SECTION F: 39
GRAND TOTAL: 150