



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2018

**INFORMATION TECHNOLOGY P2
MARKING GUIDELINE**

MARKS: 150

This marking guideline consists of 10 pages.

QUESTION 1

- 1.1.1 B ✓ SATA. (1)
- 1.1.2 C ✓ Multitasking (1)
- 1.1.3 D ✓ Slow (1)
- 1.1.4 D ✓ Only (iii) is correct (1)
- 1.1.5 C ✓ Well written software (1)
- 1.1.6 C ✓ Switch (1)
- 1.1.7 D ✓ Process (1)
- 1.1.8 A ✓ Accuracy (1)
- 1.1.9 B ✓ 0 (1)
- 1.1.10 C ✓ $X := Y$ (1)
- 1.2.1 SEO (Search Engine Optimisation) ✓ (1)
- 1.2.2 Static Website ✓ (1)
- 1.2.3 Email ✓ (1)
- 1.2.4 Telecommuting ✓ (1)
- 1.2.5 Data redundancy ✓ (1)

[15]

QUESTION 2

- 2.1 2.1.1 A motherboard is a large circuit board ✓ with many slots, connectors for attaching different components and peripherals. ✓ (2)
- 2.1.2 Provide connectors to allow others circuits to connect to it ✓
Ensures that all components communicate with each other ✓
Distributes power to the parts connected to it: ✓ (3)
- 2.2 2.2.1 The lowest level of software that manages the motherboard, ✓
Accept if learners say Basic Input and Output System (1)
- 2.2.2 Carries out the POST(Power On Self Test) ✓
Provides a user with an interface to configure the computer at lowest level ✓
Locates and loads the operating system ✓
Controls hardware at low level ✓ (4)
- 2.2.3 CMOS ✓
Accept also ROM (1)
- 2.2.4 The BIOS will not allow you to increase the processing power but it will allow you to manage the hardware. ✓ (1)
- 2.3 2.3.1 An operating system in a system software that controls all the activities that take place in the computer ✓ (1)
- 2.3.2 A process is a series of instructions that can be executed by the CPU ✓

A thread is a part of a larger program that runs independently but simultaneously with other parts of the program. ✓ (2)
- 2.3.3 Multiprocessing takes place when the operating system divides the programs or processes or threads between multiple processors ✓

E.g. when running 3D graphics or video editing. ✓ (2)
- 2.3.4 Yes, ✓ because multithreading is the splitting of a large program into smaller threads that can be processed as different processes, each thread receiving its own CPU time. ✓ (2)

- 2.4 2.4.1 A high level programming language allows you to write instructions in a language that is easy for humans to understand. ✓ (1)
- 2.4.2 Checks programming code for errors ✓ before it translates it into machine code ✓ (2)
- 2.4.3 Any ONE of:✓
 • C++
 • Delphi
 • Objective-C (1)
- [24]**

QUESTION 3

- 3.1 3.1.1 3G/LTE is a cellular data communication technology ✓ (1)
- 3.1.2 It is wireless/electromagnetic waves ✓
 Accept if learners say it does not need a medium (1)
- 3.1.3 Advantages (any TWO) ✓✓
 • Mobility of computers
 • no physical wires
 • Cheaper (2)
- 3.2 3.2.1 HAN (Home Area Network) ✓ (1)
- 3.2.2 Advantages (Any TWO) ✓✓
 • Fast and efficient communication
 • Sharing of hardware resources
 • Centralisation of data
 • Transfer of files
 • Leisure
 • Increased Control
 • Flexible access
- Disadvantages(Any TWO) ✓✓
 • Expensive to setup
 • Viruses may spread easily
 • Security risks are high (3)
- 3.2.3 Routing, ✓
 Switching ✓
 Modulating Demodulating ✓
 As an WiFi access point ✓
- Accept if the learner says as a switch, a modem, a router and a wifi access point) (4)
- 3.2.4 Star ✓ (1)

3.2.5 Any TWO ✓✓

- Every computer/device has a dedicated connection/cable to the central device usually a switch
- Traffic can be directed from the sender to the receiver directly
- If a single connection/cable to the central device/switch breaks only that device is affected

(2)

3.3 Downloading – Transferring or saving an audio or video file from the internet onto a device which can be replayed/reused later. ✓

Streaming – is the immediate and real-time delivery of media content to a receiving device. The file is not saved onto the device. ✓

(2)

3.4 3.4.1 Ease of access to technology. ✓

User Experiences ✓

The need to be always on ✓

(3)

3.4.2 Any THREE of ✓✓✓

The Display – reduce the brightness level

Multitasking – reduce the number of apps on

GPS – turn it off when not needed

Bluetooth Connectivity/Wi-Fi – turn it off when not in use

Media – avoid playing media using built in speakers and screen

(3)

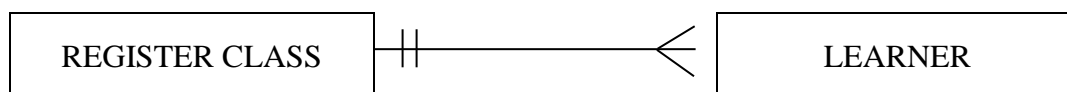
[24]

QUESTION 4

- 4.1 4.1.1 A software that allows you to work with electronic databases ✓ (1)
- 4.1.2 Any THREE ✓ ✓ ✓ (3)
- Creating databases
 - Editing the structure of the database
 - Add, edit, delete data in the database
 - Query or search the data in the database
 - Process the data to extract information
- 4.1.3 Server database is stored on one server ✓ whilst distributed database is located on different servers in different geographical locations ✓ (2)
- 4.1.4 The DBMS receives requests from client software in the form of scripts, it then executes the scripts and returns the error or result of the script to the client software. ✓ It does not have direct access to the underlying database. ✓✓ (2)
- 4.1.5 When the number of connected users become too large for one server ✓ and the business is spread over a large geographical area. ✓ (2)
- 4.2 4.2.1 Any THREE ✓ of (3)
- Accuracy
 - Correctness
 - Currency
 - Completeness
 - Relevance
- 4.2.2 Any TWO ✓✓ explanation ✓✓ (4)
- Format Check – specific data format must be entered
 - Range Check – check to see that the data falls within a certain range
 - Data type check – check to see that the right type of data is entered
 - Presence check – compulsory fields, or mandatory fields
 - Check digit – unique digits to identify personnel, or clients
- 4.3 Any TWO of ✓✓ A database administrator: (2)
- Manages the database
 - Maintains the database
 - Creates and allocates rights to users
 - Installs and configures database client software
 - Creates backups
 - Accept any other task related to database activities

- 4.4 4.4.1 A field that identifies each record with a unique value ✓ (1)
- 4.4.2 A foreign key is a field which is used to link another table ✓, A combination of more than one field to uniquely identify a table ✓. (2)
- 4.4.3 Relational Database ✓ (1)

4.5



Register Class entity box□

Learner entity box□

Line joining Register Class to Learner }

Parallel lines next to register class }

Crows foot on learner }

✓

(3)
[26]**QUESTION 5**

- 5.1 5.1.1 A array is a data structure that contains elements of the same type arranged in order by an index ✓ (1)
- 5.1.2 Any ONE of. ✓ (1)
- When we have to use a lot of data of the same type
 - It is easier to perform searching, sorting on an array
 - Any appropriate reason provide by the learner
- 5.1.3 Either Bubble Sort ✓ Or Selection Sort (1)
- 5.1.4 SELECTION sort
- ```

For i:=1 to length(Arr)-1 ✓
 For k:=i+1 to length(Arr) ✓
 If Arr[i]>Arr[k] ✓
 Swop contents of Arr[i] with Arr[j] ✓
 Endif

```
- BUBBLE SORT
- ```

For i:=1 to length (Arr) -1
  For j:=0 to length(Arr)-1-i
    If Arr(j)>Arr(j+1)
      Swop contents of Arr[j] with Arr[j+1]
    Endif
  
```
- (4)

5.2 Any THREE ✓✓✓ of

- Use descriptive names for components and variables
- Make use of indentation of the instructions to improve readability.
- Use blank lines to group sets of related instructions.
- Use comments to briefly explain the purpose of the code.
- Type one basic instruction per line. (3)

5.3 When a variable is declared in a method (event handler), it has local method scope (duration) ✓ and it will cease to exist (be destroyed) when the event handler stops executing. ✓

When a variable is declared in the private or public sections of a program it has class scope (static duration) ✓ will be available throughout the execution of the program. ✓ (4)

5.4 5.4.1 When there is a need to execute certain instructions a number of times ✓ (1)

- 5.4.2 Any TWO ✓✓ and TWO ✓✓ for explanation of
- For Loop – Loops a set number of times
 - Repeat Loop – Loops until a certain condition is met
 - While Loop – Loops while a certain condition is not met (4)

5.4.3 Lines 1 ✓, 6 ✓ and 7 ✓

```

1  Case iAge of (replace in with of) ✓
2  1..12 : Inc(iChildren);
3  13..19 : Inc(iteenagers);
4  20..60 : Inc(iAdults);
5  61..120: begin
6  Inc(iAdults);(add Semicolon and remove AND) ✓
7  Inc(iSeniors);
8  End (remove semicolon) ✓
9  else Showmessage('Please check age');
10 end; //end case

```


QUESTION 6

- 6.1 6.1.1 Any TWO ✓✓ and ✓✓ for explanation
- Virus – A form of malware that attaches itself to a file or executable program, thereby enabling it to spread through the computers
 - Worm – malware that is able to distribute itself over the network usually via e-mail, without a person having run a program
 - Spyware – a form of malware that tries to monitor or track the way you use your computer to discover confidential information, and then relay this to a third party
 - Rootkit – a collection of programs designed to use administrator rights to gain control of a computer for dangerous purposes
 - Trojan – a form of malware disguised as a useful program but in reality designed to harm. (4)
- 6.1.2 Any THREE ✓✓✓ of:
- Accidentally deleting files or formatting a disk
 - Not ensuring regular backups
 - Entering incorrect data in a program
 - Loosing or misplacing portable storage devices
 - Allowing other unauthorised users to get access to data by not strong passwords and changing them regularly (3)
- 6.1.3 GIGO (Garbage In Garbage Out). This means that if incorrect data has been input, the answers or results produced will also be a mess. ✓ (1)
- 6.1.4
- Provide physical security by locking away the computers and controlling access to the building ✓
 - Use biometric security measures ✓
 - Place important computers in lockable cabinets ✓ (3)
- 6.1.5 Any TWO ✓✓ of
- When users publish personal details which may have been used as passwords.
 - Artificial social network friends who can influence users to give out important information or passwords
 - The high number of social network users connecting, increasing the vulnerability of malware/viruses. (2)
- 6.2 6.2.1 To prevent abuse of the network ✓. (1)
- 6.2.2
- (a) Policies are settings on the server to control almost every aspect of what the user can or cannot do with the network. ✓
 - (b) Restrictions refer to limiting the user activity by changing settings in the software and hardware. ✓
 - (c) Firewalls can be hardware or software with the purpose of monitoring and controlling the communication that takes place between the network and the wider network like the internet. ✓ (3)

- 6.2.3 AUP documents outline the rights and responsibilities of its users, especially in a network environment: ✓ (1)
- 6.2.4 Any FOUR of ✓✓✓✓
- A code of conduct educating users and governing their behaviour.
 - Details on where and when portable devices may be used
 - Details of restrictions about installing software or hardware
 - Procedures to follow if users find they are victims of identity theft, malware, cyber bullying and cyber stalking
 - Hints on how to avoid plagiarism and breaking copyright law
 - Clear consequences of violating conditions spelt out in the AUP (4)
- 6.2.4 Network managers need to monitor what users do on the network ✓ and take clear visible action when a breach is found. ✓ (2)
- 6.3 6.3.1 Loss of quality ✓ (1)
- 6.3.2 JPG is for pictures ✓
Any ONE ✓ of
- MPEG-2,
 - MPEG-4,
 - 3GP (2)
- 6.3.3 Lossless compression ✓
Either WinZip ✓, or 7 Zip (2)
- 6.4 6.4.1 Any explanation covering the following THREE ✓✓✓ points
- Education and training
 - Stable supporting infrastructure
 - Pricing and availability (3)
- 6.4.3 Any TWO jobs ✓✓ with explanation ✓✓ how ICT has improved the way the job used to be done. List may include.
- Engineers
 - Architects
 - Doctors
 - Managers
 - Artists (4)
- [36]**

TOTAL: 150