**NOVEMBER EXAMINATIONS 2013**

**INFORMATION TECHNOLOGY**

**PAPER 02**

**GRADE 11**

**SUGGESTED ANSWERS**

**SECTION A**

1.1 C √

* 1. C√
  2. B √

1.4 D√

1.5 C √

* 1. D√
  2. D√

1.8 D√

1.9 C√

1.10 B √

1.11 C √

1.12 D √

1.13 C √

1.14 B √

1.15 A √ **[15]**

**SECTION B**

**QUESTION TWO: SYSTEM TECHNOLOGIES**

2.1.1 The motherboard provides connectors to allow other circuits (CPU, RAM,  
 etc.) to connect to it. √

It ensures that all components of the computer can communicate with one  
 another. √

It distributes power to the parts that connect to it. √ (3)

* + 1. ROM chip, CPU chip, BIOS√ (Any one) (1)
    2. Yes√ ROM – non-volatile and its contents required for correct boot-up process. √ (2)

2.2.1 Dual Inline Memory Module, RAM √ (any one) (1)

2.2.2 - easy to upgrade√ (1)

2.2.3 -can repair or replace component that is damaged or faulty

- easy to trouble shoot faulty components (any one) √√ (2)

* + 1. USB√ , Wireless√ (2)
    2. Thunderbolt, Firewire √ (any one) (1)
    3. “plug n play” - is the name given to the technology that automates√ the

configuration process of a device√ before it can be used. (2)

* + 1. Storage is Non-volatile RAM is volatile, Storage has relatively slow access, RAM costs much more than storage. (an y two) √√ (2)
    2. Solid State Drive/Disk√ (1)
    3. Conventional hard drive/ hard disk√ (1)
    4. Benefit of speed, robust and physically smaller (any two) √√ (2)
    5. Cache memory is extremely fast memory √ that is built into a CPU, or located next to it on a separate chip. The CPU uses cache memory to store instructions that are repeatedly required √ to run programs, improving overall system speed. (2)
    6. - Web pages that have been recently accessed are stored locally on the hard

drive so that they can be retrieved quicker the next time they are needed. √

- The next time you visit the website, the browser will check if anything on the  
 site has changed and, if there are no changes, the website will load from the   
 copy held in local storage. √ (2)

**[25]**

**QUESTION THREE: COMMUNICATION AND NETWORK TECHNOLOGIES**

* + 1. - fast and efficient communication√

- transfer of files√

- sharing of hardware and software (any two) (2)

* + - 1. - every device in a network has to have a NIC to allow it to communicate  
          in the network. √
* Used to convert the data so that it can be transmitted and to decode that data when it is received. √ (2)
  + - 1. - NIC is built into the motherboard√
* Do not have to buy a NIC card to plug into the motherboard
* No issues of compatibility (any two) √ (2)

3.2.1. -much larger bandwidth/faster transmission

-suitable for long distance

-not much interference √√ (any two) (2)

* + 1. LAN – local area network/ used within a building or small area such as

such as school, university. √ (1)

* + 1. LAN – in a LAN the devices that are connected together by switches and or routers via a UTP cable. √

WLAN - This is a type of network where the data is not transmitted via cables but over the air through the use of wireless transmitters and receivers √ (2)

* + 1. Topology – physical layout√ of a network√ (2)
    2. -easy to trouble shoot√

-easy to add new a new user to the network√ (2)

* + 1. Asymmetric Digital Subscriber Line√√ (2)
    2. ADSL modem is a multipurpose device that combines the functions of a switch√, router, modem and WiFi access point√ (2)
  1. VPN – Virtual Private Network √ – is a way users are able to login into a

network from a remote location via the internet with the same privacy and

security as a LAN√. (2)

* + 1. VoIP – Voice over Internet Protocol√ (1)
    2. Video-calling - It is when you make a call and you can see the person √ while you are speaking to him or her over the Internet√ (2)
  1. GPS √ (1)

**[25]**

**QUESTION FOUR: DATA & INFORMATION MANAGEMENT**

4.1.1. database - A database can be described as a collection of data √ or facts

regarding a specific topic√ (2)

4.1.2. A single fact√ or the smallest unit √ of data can be viewed as a field. (2)

4.1.3. A collection of fields√ that includes the particulars of a specific entity√

forms a record. (2)

4.1.4. table – is a collection √ of records. √ (2)

4.2.1. Admission\_Number√ – no two learners can have the same admission   
number – therefore it is unique. √ (2)

4.2.2. Date\_of\_Birth √- Date √ (2)

4.3.3. A cell number consists of 10 digits√ – cannot be read as a number. √ (2)

4.4.1. -what fields each record should have√

-what type of data each field should contain √

-what the size of the field should be (where appropriate)

-if there is going to be a primary key and what field should be used for  
 the primary key. (any two) (2)

4.4.2. Data validity of about correctness and reasonableness of data while integrity

about completeness and soundness of data that complies to the intentions of

the creator of the data√

Data validity – errors are more common – data integrity errors are less common√

Data validity – errors are caused by humans when entering data – data integrity errors are caused by bugs in the system. (any two) (2)

4.5. The role includes the development and design of database strategies, system monitoring and improving database performance and capacity, and planning for future expansion requirements.

They may also plan, co-ordinate and implement security measures to safeguard the database. √√ (any two) (2)

**[20]**

**QUESTION FIVE: SOLUTION DEVELOPMENT**

5.1. Algorithm Wages

Enter hourly rate

Read rate√

Enter number of hours

Read hours√

UIF 🡸 18.60√

wage 🡸 rate \* hours√

if wage >= 2000

PAYE 🡸 wage \* 0.13√

If wage < 2000

PAYE 🡸 wage \* 0.10√

deductions 🡸 UIF + PAYE

finalWage 🡸 wage – deductions√

Display finalWage√

End (8)

5.2.1. FOR Loop √ (1)

5.2.2. While / do...while √ . (1)

5.3.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| count | total | vat | finalCost | price | aveCost | Price not equal -1 | Display |
| 0 | 0 | 0 | 0 | 3500 | 5372.25√√ | True | Total :18850 |
| 1 | 3500 | 2639√ | 18850√ | 4350√ |  | True | Vat :2639 |
| 2 | 7850√ |  |  | 4500 |  | True | Final Cost : 21489 |
| 3 | 12350 |  |  | 6500√ |  | True | Count : 4 |
| 4 | 18850√ |  |  | -1 |  | False | AveCost : 5372.25 |
| √ |  |  |  |  |  | √√ | √√ |
|  |  |  |  |  |  |  |  |

(12)

5.4.1.

a) -2 is not an acceptable value – logically you cannot repair -2 units. √

The program will calculate√ the wages but it will be a negative value. (2)

b) Runtime error √√ (2)

c) Line 4 –√ should be moved out of the loop – between lines 2 and 3. √

Line 7 √is incorrect : should read as follows : pay 🡸 total \* 100 √ (4)

**[30]**

**QUESTION SIX: INTEGRATED SCENARIO**

6.1. -To keep the public aware of latest events√(any acceptable answers)

-To promote the school√ (2)

6.2. -GUI must be appropriate√ (any two)

-Navigation√

-Content must be up to date (2)

6.3.1. Search engine – is software√ that searches the web for web pages related to a specific topic√ (2)

6.3.2. So that it features as one of the most popular sites√ – thus promoting the

school √ (1)

6.3.3. ISP – is a company that provides access to the internet√ for a monthly fee√ (2)

6.3.4. router / modem √ √

(2)

6.3.5. - A firewall stops unauthorized programs on your computer√ from accessing the

Internet and stops computers on the network from accessing√ your computer

(2)

6.4.1. - modern age of technology, we can access the internet anywhere and

wherever we go. √

- It is because there are smartphones, tablet PC’s, PDA’s and so on that we

can carry it everywhere and of course we can access the internet very easy

-Allows for mobility√

-No need for cables (any two) (2)

6.4.2. -the speed of internet connection from wireless is not as fast as if you

connecting the internet using LAN modem√ (1)

6.4.3. - wireless router√

-wireless sender/receiver with antenna √ (2)

6.5.1. Green-computing - is the use of computers and related resources in an environmentally responsible manner√√- includes the use of energy saving equipment (2)

6.5.2. - switch of computers when not in use – save electricity√

- Minimize the use of paper and properly recycle waste paper√

-Dispose of e-waste according to regulations (any two correct answers) (2)

6.5.3. -dispose of e-waste responsibility – make use of recycling companies√

-donate old equipment √

-reuse parts (any two correct answers) (2)

6.5.4. –do not type in caps√ (any two correct answers)

-include a subject√

-use appropriate language (2)

6.6.1. -his ID number may be used to open bank accounts, buy things, etc. √

-apply for a passport√ (2)

6.6.2. BBM, Twitter√ (any one) (1)

6.6.2. –update status in terms of latest results, share links and videos √ (1)

6.6.3. -nasty comments – deface school’s reputation (1)

6.7.1. RS√I, CTS√, CVS, headaches (any two correct ans) (2)

6.7.2. Ergonomics - the practice of designing equipment / furniture / etc. √so that it

minimizes strain on the human body√ – specific computer areas of interest include

ergonomic keyboards, mouse, chairs, etc. (2) **[35]**

**TOTAL = 150**