**NOVEMBER EXAMINATIONS**

**2012**

**INFORMATION TECHNOLOGY**

**PAPER 02**

**GRADE 10**

**DURATION: 2 HOURS**

**MARKS: 150**

**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of FIVE sections subdivided as follows :

SECTION A: (30)

SECTION B: Hardware and software (40)

SECTION C: Applications and implications (45)

SECTION D: Data Representation (12)

SECTION E: Software Development (23)

1. Answer ALL the questions.
2. Read ALL the questions carefully.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Write neatly and legibly.
5. Start each question on a new page.

**Section A: Multiple Choice, Matching & True and False**

**QUESTION 1**

Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A-D) next to the question number (1.1-1.10) in the ANSWER BOOK.

* 1. **Which one of the following is NOT a component of the CPU?**

1. Control Unit
2. Arithmetic Logic Unit
3. Registers
4. The control bus **(1)**
   1. **The ALU is....**
5. The Amalgamated Linux Unix environment
6. A register which stores arithmetic data
7. A unit which performs mathematical calculations
8. How characters are represented in Unicode **(1)**
   1. **When a document undergoes change, this process is known as.....**
9. Formatting
10. Editing
11. Printing
12. Creating **(1)**
    1. **Personal information is misused when someone else poses as you electronically. This is known as......**
13. Data theft
14. Phishing
15. Identity theft
16. Spyware **(1)**
    1. **An algorithm is.......**
17. a set of instructions written in a computer language for solving a problem.
18. A sequence of logical steps for solving a problem.
19. The source code of a computer program that will solve a problem.
20. A sequence of plans for developing and selling a computer program. **(1)**
    1. **In which ONE of the following cases could a computer successfully replace a human being?**
21. An architect designing a building
22. A person handing out tickets at a parking lot
23. The manager of a multi-national company
24. A fashion designer designing a new dress **(1)**
    1. **The illegal duplication of copyrighted software refers to:**
25. Information theft
26. Software piracy
27. Vandalism
28. Software license removal **(1)**
    1. **Which one of the following applications is best suited for viewing a**

***You Tube* video?**

1. Media player
2. An MP3 player
3. Paint
4. Sound recorder **(1)**
   1. **\_\_\_\_\_\_\_\_ are programs that are copyrighted, but can be tried before you pay for them.**
5. Freeware programs
6. Shareware programs
7. Shrink-wrapped packages
8. Demo versions **(1)**
   1. **A software program that records what you type on the keyboard or the mouse clicks you make is called a .....**
9. Worm
10. Honeypot
11. Keylogger
12. Cookie **(1)** (10)

**QUESTION 2: MATCHING**

Match each description in ***Column A*** with an appropriate term from ***Column B***. Write down only the number and the letter corresponding to the answer of your choice.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column A** | | **Column B** | |
| **2.1** | The electronic equivalent of ‘junk mail’sent out in bulk without the recipients requesting it. | **A** | **iBurst** |
| **2.2** | A hardware component manufactured by companies such as Intel, AMD and Motorola. | **B** | **SCANNER** |
| **2.3** | A portable wireless Internet connection available in South Africa | **C** | **VoIP** |
| **2.4** | A port commonly used to connect hardware ranging from printers to flash disks. | **D** | **DRIVERS** |
| **2.5** | A device that enables a computer to send and receive information via telephone lines. | **E** | **SPAM** |
| **2.6** | Connects computers and devices on opposite sides of the world. | **F** | **SHAREWARE** |
| **2.7** | Used to get photos and other images onto your computer. | **G** | **CPU** |
| **2.8** | A technology that allows voice conversations to take place via a network such as the internet. | **H** | **USB** |
| **2.9** | Translates commands of the operating system into something that a hardware device can understand. | **I** | **MODEM** |
| **2.10** | Try before you buy software. | **J** | **WAN** |

(10)

**QUESTION 3**

**State whether the following statements are true or false.**

3.1. Piracy includes buying one licence for software and installing it on multiple

computers.

3.2. A virus is the equivalent of ‘junk mail’.

3.3. Switching your TV on Standby is being responsible when it comes to saving

electricity.

3.4. Software refers to programs and data.

3.5. A computer worm is able to distribute itself over a network. ( 5 X 2= 10)

**[30]**

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**SECTION B: HARDWARE /SOFTWARE**

**SCENARIO:**

**Tyron Chetty has recently started a business called IT Whizzards. He is a mobile IT technician who goes to the home or office of his clients to solve their IT problems. He specialises in selling solutions that are customised to his clients’ needs. He has more work than he can handle so he has agreed to employ you on a temporary basis.**

Tyron has sent you to see Mr. Jones who has just started a business which he runs from his home. Mr Jones repairs and installs concrete wall and needs advice on what computer equipment will best suit his needs and his pocket. Tyron has put together the following special offers:

|  |  |
| --- | --- |
| **OPTION 1: R4999.95** | **OPTION 2: R4999.95** |
| Packard Bell EasyNote MH45-M020 Notebook  15.4” monitor  Intel Core 2 Duo T5800 processor 2.0 Ghz  2048MB RAM  320GB HDD  Super MutliDVD writer  Integrated webcam & 802.11n WLAN  Memory card reader  Windows Vista  MSWorks included  1 year collect, repair and return warranty  Lexmark S305 Printer (Wireless all in one printer) | Acer Aspire X3810 Desktop  Acer 18.5” LCD Monitor  Intel Celeron Dual Core E3300 processor 2.5 Ghz  2048MB RAM  320GB HDD  DVDRW drive & 1b/g/n WLAN  Windows 7  1 year warranty  Cannon Pixma MP250 3 in 1 printer |

**Use the scenario to answer the following questions:**

**Question 4**

Mr Jones would like you to answer the following questions using the advertisements and your own knowledge.

4.1. What is the speed of the desktop PC and what does this unit of measure

determine? (2)

4.2. How much primary memory does the laptop have? (1)

4.3. What is the storage capacity of hard disk capacity on the laptop? (1)

4.4. Name ONE advantage of having a large capacity hard drive other than

being able to store lots of files or programs. (1)

4.5. Name 2 other storage devices that may be used with either of the adverts. (2)

4.6. Most of the peripheral devices are connected to the computer using USB ports.

4.6.1. What does the abbreviation **USB** stand for?. (1)

4.6.2. Name **ONE** port other than the USB port that can be used to

connect a digital video camera to a computer. (2)

4.7. To use any new device/peripheral a computer has to identify the

device/peripheral via a driver.

4.7.1. Define a driver in the context of computing. (2)

4.7.2. List 2 devices that can be connected to a USB port. (2)

4.8. The client is undecided about whether to purchase a **17” LCD flat screen**

**monitor**.

Give 3 reasons why LCD monitors are preferable today. (3)

4.9. The Control Unit, the ALU and registers are three components of the CPU.

4.9.1. What is the purpose of the registers? (1)

4.9.2. Describe the steps involved when an instruction is executed by the

CPU? (8)

4.9.3. Name 2 leading manufacturers of CPU’s (2)

4.9.4. Explain the difference between a dual core processor as compared

to a Core 2 duo processor? (2)

4.10. Both adverts have the same amount of RAM?

4.10.1. What is the purpose of RAM? (2)

4.10.2. Briefly explain the difference between RAM and ROM? (2)

4.11. What is the difference between a monitor’s “refresh rate’ and resolution. (2)

4.12. Both options offer inkjet printers.

Give TWO disadvantages of an inkjet printer as compared to a laser

printer. (2)

4.13. Give an example from the advert of a/an:

4.13.1. Application software

4.13.2. System software (2)

**[40]**

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**SECTION C: Application & Implications**

**Question 5: E-Communications**

Mr Jones has decided to purchase three computers that were offered to him:

* one laptop and
* two of the desktops

Mr Jones is interested in setting up a network.

5.1. Briefly explain to Mr Jones what a computer network is. (2)

5.2. Differentiate between a LAN and a WAN (2)

5.3. Discuss THREE benefits that MR Jones would experience if he is connected to the Internet. (3)

5.4. Mr Jones is excited about communicating over the internet.

Explain to Mr Jones what the following internet related terms are:

5.4.1. Voip (2) 5.4.2. e-mail (2)

5.4.3. blog (2)

5.4.4. Fax-to-e-mail (2)

5.5. If Mr Jones wants to connect to the internet. He will need an ISP....

5.5.1 What does ISP stand for? (1)

5.5.2. List THREE important factors that Mr Jones must take into

consideration when choosing an ISP (3)

5.5.3. What is a search engine ? (2)

5.6. Name a software application that is required to send an e-mail (1)

5.7. State TWO differences between an e-mail and a tweet (2)

5.8. An iPhone is classified as a smart phone, list THREE distinctive features

of a mobile phone or it to be classified as a smart phone. (3)

5.9. Explain the term social networking. (2)

5.10 Briefly explain how the excessive use of Facebook can negatively impact on the social life of a teenager. (3)

**[ 32 ]**

**Question 6: Social And Ethical Issues**

6.1. Mr Jones will need to educate his staff regarding the use of the email facility.

Briefly explain the term “netiquette “. ( 2 )

6.2. List THREE negative effects of connecting to the Internet and how to counteract each. (6)

6.3. Mr Jones will have to take ”ergonomics “ into account when he plans

his office space and furniture. What is ergonomics? (2)

6.4. Mr Jones will need to create passwords. List the guidelines for creating a

good password. (3)

**[ 13 ]**

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**SECTION D: DATA REPRESENTATION**

**Question 7**

7.1. Which number system is used internally by computers? (2)

7.2. Convert the following numbers into the number system specified:   
 (Show all steps you used to do the calculations.)

7.2.1. The binary number 110 11112 into decimal. (3)

7.2.2. The decimal number 146610 into hexadecimal. (4)

7.2.3. The hexadecimal number A56216  to decimal (3)

**[12]**

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**SECTION E: PROGRAMMING AND SOFTWARE DEVELOPMENT**

**Question 8**

8.1. Name THREE characteristics of a good algorithm. (3)

8.2. The pseudo code below is supposed to display an algorithm to read a

number and then calculate whether the number is a prime number or

not (a prime number is a number that has only itself and one as factors).

This pseudo code has some errors you need to identify. Rewrite the code,

correcting the logical errors that have been made.

(5x2 = 10)

BEGIN

Ask 'Enter a number bigger than 1'

Obtain Number

FactorCount 🡨 2

While LoopIndex < Number do

If FRACTIONPART (Number/LoopIndex) = 0

FactorCount 🡨 FactorCount + 1

EndWhile

If LoopIndex < 2

Display 'PRIME'

Else

Display 'NOT PRIME'

EndIf

END

8.3. Create an algorithm for the following scenario – you may present the algorithm

in pseudo code or as a flowchart:

A teacher wants to calculate the ***percentage*** of learners in her class that

achieved a distinction in the IT test they wrote last month. She will be entering

the test marks (out of 60) one by one.

Note the following points:

* The number of learners is 5.
* The total marks for the test is 60.
* A distinction is achieved for a percentage of 80% or more. (10)

**[23]**

**Total = 150**