

# **INFORMATION TECHNOLOGY P2 MEMO**

# **NOVEMBER 2017**

# **UMLAZI DISTRICT/CLUSTER PAPER**

# NATIONAL

# SENIOR CERTIFICATE

# **GRADE 10**

**MARKS: 150 Examiner: C.GOVENDER**

# **TIME: 3 HOURS Moderator: I.PATHER**

**This question paper consists of 11 pages**

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| **SECTION A**  **QUESTION 1: MULTIPLE CHOICE** |

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| 1.1. | 1.2. | 1.3. | 1.4. | 1.5. | 1.6. | 1.7. | 1.8. | 1.9. | 1.10. |
| **C** | **D** | **C** | **A** | **D** | **C** | **B** | **D** | **C** | **C** |

**[10]**

**QUESTION 2: MATCHING**

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| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 2.1. | 2.2. | 2.3. | 2.4. | 2.5. | 2.6. | 2.7. | 2.8. | 2.9. | 2.10. | | **B** | **I** | **H** | **C** | **D** | **E** | **G** | **F** | **J** | **A** | |
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**[10]**

**QUESTION 3: TRUE OR FALSE**

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| Statement | Answer |
| 3.1. When data is processed into something meaningful it is called information | **True** |
| 3.2. A blog is an online personal journal. | **True** |
| 3.3.Web authoring software is used to access and view web pages on the Internet | **False** |
| 3.4. CU is the part of the computer that executes the instructions, processes, manages and controls all the other parts of the computer | **False** |
| 3.5. ROM is where the computer temporarily stores instructions it is working with. | **False** |

**[5]**

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| **SECTION B** **QUESTION 4 : SYSTEM TECHNOLOGIES: HARDWARE**  4.1 3.0 Ghz **√** (1)  4.2 The CPU gets very hot when the computer is on. **√** Overheating can damage a CPU, so it needs a fan to cool it. **√** (2)  4.3 4GB**√** (1)  4.4 1TB HDD refers to the size of the hard disk **√** which is 1 Terabyte. **√** (2)  4.5 Many devices connect to USB ports. More ports allow more devices to be   connected and used simultaneously. **√** (1)  4.6 Keyboard **√** (1)  4.7 RAM is the place where the computer stores the programs or data it is  working with. Programs / data needs to be loaded into the RAM before use. **√** (1)  4.8.1 It is the size of the screen measured in inches **√** (1)  4.8.2 It is measured diagonally. **√** (1)  4.9.1 HDD **√** (1)  4.9.2 DVD **√** (1)  4.10 Firewire: used to transfer video from a video camera to your computer. **√** (1)  4.11 MSI Motherboard: It is a big circuit board with slots that connect different components of the computer and peripherals. **√**  It enables all the parts of the computer to communicate with each other. **√** (2)  4.12.1 Scanning/ copying / faxing, emailing, etc.**√√** (Any 2) (2)  4.12.2 **√** (Any 1)   * They occupy less space * Cheaper than purchasing separate equipment for each function. * Cheaper to maintain one device. (1)   4.13 A biometric scanner reads and identifies unique identifying characteristics  of people, like fingerprints **√** or the pattern of an iris, for access control  systems. **√** (2)  4.14 Advantages of a flash drive over a DVD:   * Much faster to access and store data. * Less likely to be damaged compared to optical discs. * They are also smaller in size / easier to carry around. **√√** (Any 2) (2)   **[23]**  **QUESTION 5 : SYSTEM TECHNOLOGIES: SOFTWARE**  5.1.1 Windows 10 **√** (1)  5.1.2 Microsoft Office 2016 **√** (1)  5.2 An operating system is system software which controls all activities that take place in a computer. **√** (1)  5.3 Antivirus /driver / compression software / backup **√** (Any 1) (1)  5.4.1 Device drivers are system software that allow an operating system to  communicate with and control a hardware device. **√** (1)  5.4.2 download from the Internet. **√** (1)  5.5 A GUI uses visual components to represent options and choices for the user, and it lends itself to being used with a pointing device, such as a mouse. **√** (1)  **[7]** |
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| **QUESTION 6: COMMUNICATION AND NETWORK TECHNOLOGIES-NETWORKS** |
| 6.1. A network is *a collection of computers or other computing devices such as smart phones that*  *are connected by some sort of communication media to allow users to share*  *hardware, software, data and information, and to communicate.* **√**(1)  6.2.  *Any TWO of:*   * *Fast, efficient communication* * *Sharing of hardware resources* * *Centralization of data* * *Transfer of files* * *Leisure* * *Increased control and security* * *Flexible access***√√** (2)   6.3. *Any TWO disadvantages of a computer network:*   * *Need for expertise to run it / a network administrator* * *More complex security issues involved (accept suitable examples)* * *Potential security issues (accept suitable examples)* * *Can have a decrease in performance if data or applications are not stored locally* * *User training required, etc.***√√** (2)   6.4.1. NIC  *Links the network cable to the computer and allows communication of the computer with the network*.**√** (1)  6.4.2. Switch  *It is a hardware device used to connect computers on a network so that communication can occur.***√√**(2)  6.5.1. *Made up of many very thin strands of glass or plastic each surrounded by cladding*  *and then covered by a final protective outer cover.***√** (1)  6.5.2. *\* Lower attenuation than UTP*  *\* Its immune to eavesdropping*  *\* Unaffected by EMI***√√** (2)  6.6. *A network operating system is software that controls all the communication in a network as well as the security*  *on a network.***√√** (2)  6.7. ***Clients*** *are computers (PCs or workstations) that use but do not provide network*  *resources. They rely on servers for resources such as files and printing.***√√**  ***Servers*** *are computers that only provide network resources. They are powerful*  *computers with large hard drives, and are never used as normal users’ PCs.***√√**  ***Peers*** *are those computers that both use and provide network resources.***√√**(6)  6.8.  *Peer-to-peer*   |  |  | | --- | --- | | *Advantages* | *Disadvantages* | | *No server is necessary.* | *All the computers have to be of a high standard with large disk capacity and powerful processors.* | | *Software is cheaper, as it is often built into many operating systems, for example, Windows XP.* | *Can only be used with a small number of computers – 10 or less.* | | *Can be installed by a person with reasonably low technical skills.* | *Can have slow performance* | | *Since there is no server, the machines can run as stand-alone should a network fault occur.* | *Security is limited.* | | *Does not need a dedicated network administrator.* |  |   **√√√√**(4)  [23] |
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| **QUESTION 7: DATA AND INFORMATION MANAGEMENT THEORY AND NUMBER CONVERSIONS** |
| 1. A **bit** is a single numeric value, either one or zero, that encodes a single unit of digital information, and a **byte** is a sequence of bits.**√**(1) |
| 1. 8**√**? (1) |
| 1. Convert 1010112 to a decimal number (3)   = (1\*25)+(0\*24)+(1\*23)+(0\*22)+(1\*21)+(1\*20)**√**  = 32+0+8+0+2+1**√**  =43**√** |
| 1. Convert 4138 to a decimal number (3)   = (4\*82)+(1\*81)+(3\*80)**√**  = 256+8+3**√**  = 267**√** |
| 1. Convert 578 to an octal number (3)  |  |  |  | | --- | --- | --- | | Base | 578 | Remainder | | 8 | 72 | 2 | | 8 | 9 | 0 | | 8 | 1 | 1 | | 8 | 0 | 1 |   578 = 11028**√√√** |
| [11] |
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| **QUESTION 8: SOLUTION DEVELOPMENT** |
| 8.1 Given the following Delphi program, correct the 5 errors in the program. Write only the line number with your answer. E.g. line 12 :IntToStr.  Line:  2. sID : string; **√**  5. sID := InputBox('Test gender','Enter your ID number', ‘’) ;**√**  7. if iSeventh IN [0..4] then  \*remove the do**√**  7. if iSeventh IN [0..4] then  \* remove single quotes around the zero and 4**√**  8. ShowMessage('FEMALE') ;  \*no semi-colon after statement. **√**(5)  T  Sum, avg, CountPostive  avg sum/5  sumsum + num  num> 0  ii + 1  num  i< 6  sum0  i1  CountPositive 0  CountPositiveCountPositive + 1 |
| 8.2  F  T  F |
| Possible solution -Allocate marks appropriately(8)  8.3 Draw a trace table for the flowchart mentioned in question 8.2 with the following data: 7; 9; -4; -12; 3.   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | BOX | Counter | Sum | Number | Num>0 | Count  Positive | Counter  <=5 | Avg | Output | |  | 1 |  |  |  |  |  |  |  | |  |  | 0 |  |  |  |  |  |  | |  |  |  | 7 | True | 1 |  |  |  | |  |  | 7 |  |  |  |  |  |  | |  | 2 |  |  |  |  |  |  |  | |  |  |  |  |  |  | True |  |  | |  |  |  | 9 | True | 2 |  |  |  | |  |  | 16 |  |  |  |  |  |  | |  | 3 |  |  |  |  |  |  |  | |  |  |  |  |  |  | True |  |  | |  |  |  | -4 |  |  |  |  |  | |  |  | 12 |  |  |  |  |  |  | |  | 4 |  |  |  |  |  |  |  | |  |  |  |  |  |  | True |  |  | |  |  |  | -12 |  |  |  |  |  | |  |  | 0 |  |  |  |  |  |  | |  | 5 |  |  |  |  |  |  |  | |  |  |  |  |  |  | True |  |  | |  |  |  | 3 | True | 3 |  |  |  | |  |  | 3 |  |  |  |  |  |  | |  | 6 |  |  |  |  |  |  |  | |  |  |  |  |  |  | False |  |  | |  |  |  |  |  |  |  | 0,6 |  | |  |  |  |  |  |  |  |  | 3 sum  0,6 avg  3 positive |   Possible solution -Allocate marks appropriately(7)  [20] |

Q**UESTION 9: INTEGRATED QUESTION**

9.1.1 *End user license agreement***√** (1)

9.1.2 *No. The EULA is a licence agreement between the software company and the user, specifying the conditions under which the user can install and use the software. The EULA is a legally binding contract between the user and the software company.* **√√** (2)

*9*.2.1 *Intellectual property is anything created by the mind. Copyright law protects intellectual property by creating legal limits on who can copy, sell and use this type of work.***√√** (2)

9.2.2 *Different countries have different copyright laws and the level of policing and detecting these practices might be a lower priority.***√√** (2)

9.3.1 *The Digital Divide refers to situations when individuals or groups do not have access to, or the ability to make use of, technology, compared to digitally enabled groups.***√√** (2)

9.3.2 *Lack of financial resources*

*Differences in education levels*

*The Age Gap*

*Disabled individuals***√√** (2)

9.4.1 Copyleft (1)

Copyleft-style copyright licenses that allow you to use parts of, copy and distribute work for non-profit purposes**√**

* + 1. Creative Commons (2)

Creative Commons is a non-profit organisation who have implemented more flexible licenses for the creators of content to control how their intellectual property is licensed and shared.**√√**

9.5.1 Ergonomics (1)

**Ergonomics** refers to the study of how people (users) interact with objects (such as computer hardware) in order to maximise the ease of use and reduce the risk of injuries and other health-related problems. **√**

* + 1. RSI (1)

A class of injuries (to tendons etc) caused by repetitive actions**√**

* + 1. CTS (1)

Caused by inflammation of the tendons in the wrist, causing pressure on the nerves in the wrist, resulting in pain and sometimes weakness in parts of the hand **√**

9.6 Green computing refers to initiates to design, use and disposal of technology in

an environmentally or eco-friendly way**√** (1)

9.7

9.7.1 The ‘paperless office’ refers to a concept of all documents in an office being

stored, transmitted and processed electronically, instead of using hard

copies**√** (1)

9.7.2 (Any TWO)  
Small portable devices with high-quality displays and long battery lives have only arrived recently to start to reduce the need for paper.   
  
Not everyone can afford the portable technology needed to reduce their dependence on paper.  
  
A hard copy can be the cheapest and easiest way to get copies of a finished product to the people who need to receive it.  
  
Hard copies of documents are often needed for legal purposes.  
It’s not practical to use anything but paper for posters, etc.**√√** (2)

9.8.1 Trojans – A destructive program disguised as a useful application. You are tricked into opening it as it seems to be legitimate software, so you open and run it. **√**(1)

* + 1. Phishing – Attempts to con the user into giving out personal confidential details by posing as a legitimate organisation, often a bank, usually via e-mail.

**√**(1)

* + 1. Pharming – A situation where the user’s computer is infiltrated so that they are taken to another (fake) website even if they type in the correct URL(address) for the site. **√**(1)
    2. Email spoofing – is the changing of an email header so that the origin of the e-mail appears to be from a different source. **√**(1)
    3. Spyware – is software that tries to monitor and track the way you use your computer. It is installed on users’ computers without their knowledge.**√**(1)

9.9 Any THREE suggestions

* You always need to be aware that the person with whom you are communicating may not be who they say they are.
* Never be tempted to give out any personal details such as your name, address or telephone numbers to people you meet online.
* Do not make arrangements to meet someone you meet online. If someone wants to meet you in person, inform an adult and do not make any arrangements to meet them.
* If someone makes you feel uncomfortable by asking personal questions or using bad language, then discontinue the ‘conversation’ immediately and tell your parents.
* Don’t be tempted to use your real name in chat rooms. Rather use a nickname or alias that does not show your gender or age.
* Never accept file transfers from strangers. Some chat programs allow users to exchange files. These files can potentially contain viruses or other harmful items. If possible, turn off this feature in your chat software.
* Be suspicious of someone who is just too ‘perfect’. The details of what you like and enjoy are available for everyone to see. It is therefore very easy for someone to take that information and fake being your ‘soul mate’ to gain your trust. (This is how paedophiles work.) **√√√** (3)

9.10

9.10.1 Netiquette (Internet + Etiquette) is the name given to the use of good manners

and showing respect for other users when using the Internet**√** (1)

9.10.2 Use of capital letters, which means she is shouting.  
It contains spelling mistakes.  
It contains personal information**√√√** (3)

9.11

9.11.1 Spam is the electronic equivalent of ‘junk mail’.**√** (1)

9.11.2 Any THREE ways

* Check if your ISP can help. Many service providers filter out as much of the spam as possible.
* Be careful of who you give your personal details and e-mail address to. Many websites and even some organizations ‘sell’ lists of contact details.
* Investigate the capabilities of your e-mail program. Most programs have the ability to set up rules to filter out spam and automatically send it to a so-called Junk or Spam folder. These rules can be based on words appearing in the content of the e-mail or if e-mail comes from a particular sender.
* Most anti-virus programs have anti-spam software included. Specialized anti-spam software also exists.
* Never respond to spam (this merely confirms a valid e-mail address).**√√√**

(3)

9.12.1 Any TWO ways

Infected attachments sent with e-mail messages  
infected downloaded files from the Internet   
infected files stored on portable media such as a flash drive.**√√** (2)

* + 1. As new viruses come out daily, virus definitions need to be updated often and can be downloaded from the Internet for the anti-virus software you have installed.**√** (1)
    2. Any ONE  
       McAfee, AVG, Kaspersky, Norton, Bit Defender.**√** (1)

**[41]**

**TOTAL: 150**