

Education

KwaZulu-Natal Department of Education

REPUBLIC OF SOUTH AFRICA

**INFORMATION TECHNOLOGY**

**PAPER 2 - MEMORANDUM**

# JUNE EXAMINATION 2018

# NATIONAL

# SENIOR CERTIFICATE

### GRADE 10

# MARKS: 100 Examiner: Mr. M. Dzanibe

**Mr. T.K. Mkhize**

## **TIME: 2 hours Moderator: Mrs. S. Rampersadh**

|  |  |  |  |
| --- | --- | --- | --- |
| **SECTION A: SHORT QUESTIONS** | | | |
|  |  |  |  |
| **QUESTION 1: MULTIPLE CHOICE** | | | |
|  |  |  |  |
|  | 1.1 | A 🗸 |  |
|  |  |  |  |
|  | 1.2 | C 🗸 |  |
|  |  |  |  |
|  | 1.3 | C 🗸 |  |
|  |  |  |  |
|  | 1.4 | B 🗸 |  |
|  |  |  |  |
|  | 1.5 | D 🗸 |  |
|  |  |  |  |
|  | 1.6 | C 🗸 |  |
|  |  |  |  |
|  | 1.7 | D 🗸 |  |
|  |  |  |  |
|  | 1.8 | B 🗸 |  |
|  |  |  |  |
|  | 1.9. | B 🗸 |  |
|  |  |  |  |
|  | 1.10 | A 🗸 | **[10]** |
|  |  |  |  |
| **QUESTION 2: MATCHING COLUMNS** | | | |
|  |  |  |  |
|  | 2.1 | D 🗸 |  |
|  |  |  |  |
|  | 2.2 | H 🗸 |  |
|  |  |  |  |
|  | 2.3 | F 🗸 |  |
|  |  |  |  |
|  | 2.4 | A 🗸 |  |
|  |  |  |  |
|  | 2.5 | C 🗸 | **[5]** |
|  | | | |
| **QUESTION 3: TRUE OR FALSE** | | | |
|  |  |  |  |
|  | 3.1 | False, the hexadecimal number system is represented by base 16. 🗸 |  |
|  |  |  |  |
|  | 3.2 | True 🗸 |  |
|  |  |  |  |
|  | 3.3 | False, ASCII is a coding system which is limited to 256 different characters. 🗸 |  |
|  |  |  |  |
|  | 3.4 | True 🗸 |  |
|  |  |  |  |
|  | 3.5 | True 🗸 | **[5]** |
|  |  |  |  |
|  |  | **TOTAL SECTION A:** | **[20]** |
| **SECTION B – SYSTEMS TECHNOLOGIES** | | | |
|  |  |  |  |
| **QUESTION 4: HARDWARE AND SOFTWARE** | | | |
|  |  |  |  |
| 4.1 |  | |  |
|  | 4.1.1 | Hardware refers to the physical components and devices, the parts of a computer that you can physically touch, 🗸 whereas, software refers to the set of instructions that tell the computer what to do. 🗸 | **(2)** |
|  |  |  |  |
|  | 4.1.2 | Any TWO input devices: 🗸🗸   * Keyboard * Mouse * Touchpad * Microphones * Scanners   Any other suitable answers  Any TWO output devices: 🗸🗸   * Monitor * Printer * Data projectors * Speakers * Headphones   Any other suitable answers | **(4)** |
|  |  |  |  |
|  | 4.1.3 | Any TWO differences: 🗸🗸🗸🗸   * SSDs are electronic storage, whereas HDDs are magnetic/mechanical storage * SSDs are faster, whereas HDDs are slower * SSDs are expensive, whereas HDDs are cheaper * SSDs have small capacities, whereas HDDs have large capacities   Any other suitable answers | **(4)** |
|  |  |  |  |
|  | 4.1.4 | For fast data transfer mainly used for videos. 🗸 | **(1)** |
|  |  |  |  |
|  | 4.1.5 | Any ONE: 🗸   * Flash disks * Portable hard drives * Memory cards   Any other suitable answers | **(1)** |
|  |  |  |  |
| 4.2 |  | |  |
|  | 4.2.1 | The Central Processing Unit is the part of the computer that does all the processing. 🗸 | **(1)** |
|  |  |  |  |
|  | 4.2.2 | Zero Insertion Force (ZIF) socket 🗸 | **(1)** |
|  |  |  |  |
|  | 4.2.3 | RAM loses its contents when there is no power. 🗸 | **(1)** |
|  |  |  |  |
| 4.3 |  | |  |
|  | 4.3.1 | System software is the software used to manage and control the operation of the computer.🗸  Examples: operating system, utility programs, etc. 🗸 any suitable example  Application software is additional programs that allow you to use the computer to do many different things. 🗸  Examples 🗸 any suitable example: Microsoft Word, Microsoft Excel, Internet Explorer, Firefox, etc. | **(4)** |
|  |  |  |  |
|  | 4.3.2 |  |  |
|  |  | a.) An operating system is system software that which controls all activities in the  computer. 🗸 | **(1)** |
|  |  |  |  |
|  |  | b.)  Any ONE mobile OS: 🗸   * iOS * Android * QNX * Windows mobile   Any other suitable answers  Any ONE desktop OS: 🗸   * Windows * Apple OS X * Linux * Google Chrome OS * Unix   Any other suitable answers | **(2)** |
|  |  |  |  |
|  |  | c.) Any THREE functions: 🗸🗸🗸   * Provides an interface that allows us to interact with the computer and programs. * Process and task management by managing the CPU and how it runs programs. * Manages the memory (RAM) to control how programs use it. * Manages input and output, and how programs use the input and output devices. * Manages how data is organised on the storage device and how or when programs access the storage device. | **(3)** |
|  |  |  |  |
|  | 4.3.3 |  |  |
|  |  | a.) Open source software (OSS) is made available with a license that allows you to  modify the source code, 🗸 whereas, proprietary software is owned by a company and  you do not have access to the source code. 🗸 | **(2)** |
|  |  |  |  |
|  |  | b.)   |  |  | | --- | --- | | **Advantages** 🗸🗸 any TWO | **Disadvantages** 🗸🗸 any TWO | | No cost / low cost | No one to hold responsible for glitches and shortcomings | | Access to source code | Risk of poor support | | Freedom to adapt and change the software | You require higher skills to use this model to its full potential | | Access to a community of users / support | Various varieties of the same software can arise | | **(4)** |
|  |  |  |  |
|  | 4.3.4 | Utility programs are part of system software and perform maintenance and administrative tasks. 🗸  Examples 🗸🗸 any TWO: Anti-virus software, Backup, Disk cleanup, ScanDisk, WinZip, etc. | **(3)** |
|  |  |  |  |
|  | 4.3.5 | Device drivers allow an operating system to communicate with and control a hardware device. 🗸 | **(1)** |
|  |  |  |  |
|  |  | **TOTAL: SECTION B** | **[35]** |
|  |  |  |  |
| **SECTION C - DATA AND INFORMATION MANAGEMENT** | | | |
|  |  |  |  |
| **QUESTION 5:** | | | |
|  |  |  |  |
| 5.1 |  | |  |
|  | 5.1.1 | 8 🗸 | **(1)** |
|  |  |  |  |
|  | 5.1.2 | Approximately 6,8 MB 🗸 | **(1)** |
|  |  |  |  |
|  | 5.1.3 | Any ONE: 🗸   * Integer / whole number * Real / floating point / decimal * String / text | **(1)** |
|  |  |  |  |
|  | 5.1.4 |  |  |
|  |  | a.) | **(3)** |
|  |  |  |  |
|  |  | b.) 🗸  🗸  🗸 | **(3)** |
|  |  |  |  |
| 5.2 |  | |  |
|  | 5.2.1 | Windows explorer 🗸 | **(1)** |
|  |  |  |  |
|  | 5.2.2 | Operating systems use file extensions to identify which program to use to open a particular type of file. 🗸 | **(1)** |
|  |  |  |  |
|  | 5.2.3 |  |  |
|  |  | a.) .txt – Microsoft Word or WordPad or Notepad, etc. 🗸 any suitable answer | **(1)** |
|  |  |  |  |
|  |  | b.) .jpg – Paint or MS Windows Photo Viewer or Apple Preview or Apple Photos, etc.  🗸 any suitable answer | **(1)** |
|  |  |  |  |
|  | 5.2.4 |  |  |
|  |  | a.) Four 🗸 | **(1)** |
|  |  |  |  |
|  |  | b.) It represents a drive which can be storage devices or hard disk partitions. 🗸 | **(1)** |
|  |  |  |  |
|  |  | **TOTAL: SECTION C** | **[15]** |
|  |  |  |  |
| **SECTION D - SOLUTION DEVELOPMENT** | | | |
|  |  |  |  |
| **QUESTION 6:** | | | |
|  |  |  |  |
| 6.1 |  | |  |
|  | 6.1.1 | An algorithm is a sequence of steps that can be followed in order to solve a problem. 🗸  Represented using a flowchart or pseudocode. 🗸 any ONE | **(2)** |
|  |  |  |  |
|  | 6.1.2 | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Box No.** | **Num** | **Factorial** | **Counter** | **Counter <= Num** | **Output** | | 1 | 5 |  |  |  |  | | 2 |  | 1 |  |  |  | | 3 |  |  | 1 |  |  | | 4 |  |  |  | True |  | | 5 |  | 1 |  |  |  | | 6 |  |  | 2 |  |  | | 4 |  |  |  | True |  | | 5 |  | 2 |  |  |  | | 6 |  |  | 3 |  |  | | 4 |  |  |  | True |  | | 5 |  | 6 |  |  |  | | 6 |  |  | 4 |  |  | | 4 |  |  |  | True |  | | 5 |  | 24 |  |  |  | | 6 |  |  | 5 |  |  | | 4 |  |  |  | True |  | | 5 |  | 120 |  |  |  | | 6 |  |  | 6 |  |  | | 4 |  |  |  | False |  | | 7 |  |  |  |  | 120 | | 🗸 | 🗸 | 🗸 | 🗸 | 🗸 | 🗸 | | **(6)** |
| 6.2 |  | |  |
|  | 6.2.1 | Debugging a program means finding and fixing any errors that may occur in the code. 🗸 | **(1)** |
|  |  |  |  |
|  | 6.2.2 | **Any THREE of the following:**   * Var needs to be inserted as it is missing 🗸🗸 * Line 4: conversion needs to be done 🗸   a := StrToInt(InputBox('Input', 'Enter first number:', '0')); 🗸   * Line 5: conversion needs to be done and colon missing in assignment 🗸🗸   b := StrToInt(InputBox('Input', 'Enter second number:', '0')); 🗸🗸   * Line 7: the semi-colon needs to be removed 🗸🗸 * Line 11: the conversion for b is incorrect 🗸   ShowMessage(IntToStr(a) + ' is equal to ' + IntToStr(b)); 🗸 | **(6)** |
|  |  |  |  |
|  |  | **TOTAL: SECTION D** | **[15]** |
| **SECTION E - SOCIAL IMPLICATIONS** | | | |
| **QUESTION 7:** | | | |
| 7.1 |  | |  |
|  | 7.1.1 | When Sihle purchased the game he only purchased a software license to use the game on one computer. 🗸 Copyright creates legal limits on who can copy, sell and use the game, if Sihle copies the game for his friend he will be committing a crime. 🗸 | **(2)** |
|  |  |  |  |
|  | 7.1.2 | Piracy 🗸 | **(1)** |
|  |  |  |  |
| 7.2 | Any THREE: 🗸🗸🗸   * Computers are more accurate and reliable than people * Computers are fast * Computers can work 24 hours a day, 7 days a week * Computers cost less than people in the long run * Computers make communication faster, easier and cheaper * Computers reduce the need for other resources * Computers can improve the overall effectiveness and running of a business | | **(3)** |
|  |  |  |  |
| 7.3 |  | |  |
|  | 7.3.1 | Ergonomics refers to the study and design of workplace for comfort and safety of people in work environments. 🗸 | **(1)** |
|  |  |  |  |
|  | 7.3.2 | Any TWO: 🗸🗸   * He can use ergonomically designed hardware * Ensure that the monitor is positioned at the correct level * Ensure that the lighting and ventilation is adequate * Adjust the height of your seat or table so that your body is not strained in any way * Ensure that the mouse and keyboard are on the same level * Ensure that the mouse is placed close to the keyboard | **(2)** |
|  |  |  |  |
|  | 7.3.3 | Any TWO: 🗸🗸   * Sit correctly, don’t slouch * Take regular breaks * Turn your eyes away from the monitor once in a while | **(2)** |
|  |  |  |  |
| 7.4 |  | |  |
|  | 7.4.1 | E-waste is broken, old, outdated and discarded hardware that we don’t want anymore. 🗸 | **(1)** |
|  |  |  |  |
|  | 7.4.2 | Green computing refers to initiatives to design, use and disposal of technology in an environmentally or eco-friendly way. 🗸 | **(1)** |
|  |  |  |  |
|  | 7.4.3 | Any TWO: 🗸🗸   * Proofread on the screen before you print * Print 2 pages on one page * Print back-to-back | **(2)** |
|  |  |  |  |
|  |  | **TOTAL: SECTION E** | **[15]** |