

**INFORMATION TECHNOLOGY**

**PAPER 2 – MEMORANDUM**

**JUNE EXAMINATION 2016**

**GRADE 10**

**MARKS: 100**

**TIME: 2 HOURS**

**This question paper consists of 10 pages including the cover page.**

**SECTION A : MULTIPLE CHOICE QUESTIONS**

**QUESTION 1**

|  |  |
| --- | --- |
| 1.1 | C 🗸 |
| 1.2 | A 🗸 |
| 1.3 | B 🗸 |
| 1.4 | C 🗸 |
| 1.5 | D 🗸 |
| 1.6 | B 🗸 |
| 1.7 | C 🗸 |
| 1.8 | B 🗸 |
| 1.9 | D 🗸 |
| 1.10 | A 🗸 |

**SECTION B : SYSTEMS TECHNOLOGY**

**QUESTION 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2.1 |  |  |  |  |
|  | 2.1.1 | It is a large piece of circuitry with slots and connectors for different components and peripherals to connect to it. 🗸 |  | (1) |
|  |  |  |  |  |
|  | 2.1.2 |  |  |  |
|  |  | 1. It is the part of the computer that does all the work or processing. 🗸 |  | (1) |
|  |  |  |  |  |
|  |  | 1. Intel OR AMD 🗸 |  | (1) |
|  |  |  |  |  |
|  |  | 1. The CPU gets very hot when the computer is on and overheating can damage the CPU therefore it needs a cooling fan. 🗸 |  | (1) |
|  |  |  |  |  |
|  | 2.1.3 |  |  |  |
|  |  | 1. It helps with the fast transfer of data so that the CPU can process the data and information. 🗸 |  | (1) |
|  |  |  |  |  |
|  |  | 1. Yes 🗸   Increasing RAM will result in increasing the speed of the computer. 🗸  (Do not give marks for Answer only, must have a correct reason supporting their answer) |  | (2) |
|  |  |  |  |  |
|  |  | 1. RAM is  * Volatile 🗸 * Expensive 🗸 *(any other relevant answer)* |  | (2) |
|  |  |  |  |  |
| 2.2 | * It is smaller * Lighter * More energy efficient * Cheaper to replace * Aesthetically pleasing to look at   🗸🗸  *(Any 2 advantages from above)* | |  | (2) |
|  |  | |  |  |
| 2.3 | Due to the classes being so big it is the best way to project images on a big screen so that everyone in the class can see and get the information. 🗸 | |  | (1) |
|  |  |  |  |  |
|  | 2.4.1 | Printer is an example of a MFD(Multi-function device) which has the ability of doing 3 functions; Scanning, copying and Printing. 🗸 |  | (1) |
|  |  |  |  |  |
|  | 2.4.2 | It melts toner onto paper in order to print an image. 🗸 |  | (1) |
|  |  |  |  |  |
|  | 2.4.3 | Inkjet **or** dot-matrix 🗸 |  | (1) |
|  |  |  |  |  |
|  | 2.4.4 | a) Device drivers are essential pieces of software that allows an operating system to communicate with and control a hardware device. 🗸 |  | (1) |
|  |  |  |  |  |
|  |  | b)   * download the drives from the Internet * reload the driver that came with the printer * go to a computer shop and purchase the software.   🗸 *(ONE of the above response)* |  | (1) |
|  |  |  |  |  |
| 2.5 |  | |  |  |
|  | 2.5.1 | It is system software which controls all activities that take place in a computer. 🗸 *(No marks will be allocated for giving examples only)* |  | (1) |
|  |  |  |  |  |
|  | 2.5.2 | * Provides an interface * Process and task management * Memory management * Input/output management * Disk management   🗸🗸 *(TWO of the above 5 response)* |  | (2) |
|  |  |  |  |  |
|  | 2.5.3 | Embedded operating systems differ in that they are stored on internal memory 🗸 chips so they are not loaded from disk as in a standalone operating system. 🗸 |  | (2) |
|  |  |  |  |  |
| 2.6 |  | |  |  |
|  | 2.6.1 | Memory is a where the computer stores data temporarily 🗸 whereas storage is more permanent. 🗸 |  | (2) |
|  |  |  |  |  |
|  | 2.6.2 | * Electronic rather than mechanical * Much faster than optical or magnetic storage * Less likely to get damaged as compared to hard drives * Smaller and lighter to carry around.(portable)   🗸🗸 *(ANY TWO relevant answers)* |  | (2) |
|  |  |  |  |  |
| 2.7 |  | |  |  |
|  | 2.7.1 | USB **OR** Firewire **OR** Thunderbolt 🗸 |  | (1) |
|  |  |  |  |  |
|  | 2.7.2 | * Need less power 🗸 * Can run on the power that is supplied by the cable. 🗸   *(Accept any other variations.)* |  | (2) |
|  |  |  |  |  |
| 2.8 | To allow current, relevant and up-to-date data to be accessible on more than one computing device so that one is able to use it anywhere. 🗸 | |  | (1) |
|  |  |  |  |  |
|  |  | **Total for Section B:** |  | **30** |

**SECTION C : SOCIAL IMPLICATIONS**

**QUESTION 3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3.1 |  | |  |  |
|  | 3.1.1 |  |  |  |
|  |  | 1. End User License Agreement 🗸 |  | (1) |
|  |  |  |  |  |
|  |  | 1. It is a license that you purchase to use software 🗸 to install on only one computer / device only 🗸 |  | (2) |
|  |  |  |  |  |
|  | 3.1.2 | Copyright is designed to protect intellectual property from distribution 🗸 whereas Copyleft allows people to use and distribute work whilst still allowing the creator some control. 🗸 |  | (2) |
|  |  |  |  |  |
|  | 3.1.3 |  |  |  |
|  |  | 1. Is the act of stealing intellectual property – illegal distribution and use🗸 |  | (1) |
|  |  |  |  |  |
|  |  | * Installing and using software that is not free without paying for it * Sharing software with friends/family when not permitted to do so * Selling illegal copies of media or software * Large scale copying and selling of illegal counterfeit copies of media   🗸🗸 *(ANY TWO relevant response)* |  | (2) |
|  |  |  |  |  |
| 3.2 | The gap between people that have access to computers and technology and know how to use it and people that don’t. 🗸 | |  | (1) |
|  |  |  |  |  |
| 3.3 |  | |  |  |
|  | 3.3.1 | * Switch off computers and devices you are not using * Try and avoid senseless wasting of paper – edit/correct work on screen before printing * Repair or upgrade hardware * Don’t throw away ink and toner cartridges. * Refilling and reusing ink and toner cartridges   🗸🗸 *(Any TWO from above)* |  | (2) |
|  |  |  |  |  |
|  | 3.3.2 | The study and design of workplace for comfort and safety of people in work environments. 🗸 |  | (1) |
|  |  |  |  |  |
|  | 3.3.3 | * Sit correctly * Make sure lighting and ventilation is adequate * Your mouse and keyboard must be on the same level * Take regular breaks * The monitor should be positioned at the correct level so you don’t strain your neck.   🗸🗸🗸 *(any THREE relevant response)* |  | (3) |
|  |  |  |  |  |
|  |  | **Total for Section C:** |  | **15** |

**SECTION D: DATA AND INFORMATION MANAGEMENT**

**QUESTION 4**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4.1 |  | |  |  |
|  | 4.1.1 | Data is raw unprocessed facts 🗸 whereas information is the result of the processing of data and is useful and meaningful. 🗸 |  | (2) |
|  |  |  |  |  |
|  | 4.1.2 |  |  |  |
|  |  | 1. 8 🗸 |  | (1) |
|  |  |  |  |  |
|  |  | 1. Integer or whole number   Real or decimal or floating point  String or text  🗸🗸 *(any TWO from above)* |  | (2) |
|  |  |  |  |  |
|  |  | 1. Truncation and Overflow 🗸 - when some text is lost or truncated and where there is a misinterpretation of bytes. 🗸   Loss of accuracy 🗸 - does not give the accurate information 🗸 |  | (4) |
|  |  |  |  |  |
| 4.2 |  | |  |  |
|  | 4.2.1 | D drive 🗸 |  | (1) |
|  |  |  |  |  |
|  | 4.2.2 | Documents OR SchoolFees OR 2016 🗸 |  | (1) |
|  |  |  |  |  |
|  | 4.2.3 |  |  |  |
|  |  | 1. Spreadsheet 🗸   It has a file extension “xlsx” which means it was created and can be opened in Microsoft Excel. 🗸 |  | (2) |
|  |  |  |  |  |
|  |  | * Share data by using a common format that both programs can read and interpret * Allows users who are using a different operating system to access the data * Allow users who are using older versions of a program to access the data   🗸🗸 *(any TWO from above)* |  | (2) |
|  |  |  |  |  |
| 4.3 |  | |  |  |
|  | 4.3.1 | = (1×27)+(0×26)+(0×25)+(1×24)+(1×23)+(1×22)+(0×21)+(1×20) 🗸  =128 + 0 + 0 + 16 + 8 + 4 + 0 + 1 🗸  = 15710 🗸 |  | (3) |
|  |  |  |  |  |
|  | 4.3.2 | = (1 × 22) + (0 × 21) + (1 × 20) + (1 × 2-1) + (0 × 2-2) + (1 × 2-3) 🗸  = 4 + 0 + 1 + ½ + ¼ + 1/8 🗸  = 5.87510 🗸 |  | (3) |
|  |  |  |  |  |
|  | 4.3.3 | |  |  |  | | --- | --- | --- | | B | 6532 | R | | 2 | 3266 | 0 | | 2 | 1633 | 0 | | 2 | 816 | 1 | | 2 | 408 | 0 | | 2 | 204 | 0 | | 2 | 102 | 0 | | 2 | 51 | 0 | | 2 | 25 | 1 | | 2 | 12 | 1 | | 2 | 6 | 0 | | 2 | 3 | 0 | | 2 | 1 | 1 | | 2 | 0 | 1 |   🗸 🗸 🗸  = 11001100001002 🗸 |  | (4) |
|  |  |  |  |  |
|  |  | **Total for Section D:** |  | **25** |

**SECTION E : SOLUTION DEVELOPMENT**

**QUESTION 5**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5.1 |  | |  |  |
|  | 5.1.1 | num  count  sum  🗸 ONE from above |  | (1) |
|  |  |  |  |  |
|  | 5.1.2 | It is used to determine the remainder after one number has been divided by another. 🗸 |  | (1) |
|  |  |  |  |  |
|  | 5.1.3 | Unconditional 🗸  We know how many times the loop must run so there is no condition. 🗸 |  | (2) |
|  |  |  |  |  |
|  | 5.1.4 | Line 1 count 🡨 0🗸  the count should be set to 1 because you cannot divide by 0 🗸  Line 5 sum 🡨 sum + num 🗸  need to add sum to count not the number. 🗸 |  | (4) |
|  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 5.2 | Start   1. repeat 20 🗸 2. Input name 3. Input dob 🗸 4. Input contact 5. first 🡨 letter 1 of name + letter 2 of name 🗸🗸 6. year 🡨 letter 1 of dob + letter 2 of dob + letter 3 of dob + letter 4 of dob 🗸🗸🗸 7. age 🡨 2016 – year 🗸 8. random 🡨 pick random from 5 to 10 🗸 9. code 🡨 first + age + ‘@’ + random 🗸🗸 10. add code to passswordList 🗸   Stop  **OR**  Start   1. repeat 20 🗸 2. Input name 3. Input dob 🗸 4. Input contact 5. first 🡨 letter 1 of name + letter 2 of name 🗸🗸 6. c 🡨 1 7. repeat 4 🗸 8. year 🡨 join letter c of dob to year 🗸 9. change c by 1 🗸 10. age 🡨 2016 – year 🗸 11. random 🡨 pick random from 5 to 10 🗸 12. code 🡨 first + age + ‘@’ + random 🗸🗸 13. add code to passswordList 🗸   Stop | | |  | | (12) | |
|  |  |  | |  | |  | |
|  |  |  | |  | |  | |
|  |  | **Total for Section E:** | |  | | **20** | |
|  |  | **GRAND TOTAL:** |  | | **100** | |